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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

GUIDELINES  
FOR  
WILDLIFE HABITAT MANAGEMENT  
AND IMPROVEMENT ON  
BLM - ADMINISTERED LANDS  
IN IDAHO

IDAHO STATE OFFICE  
FEDERAL BUILDING  
BOISE, IDAHO  
AUGUST 1966

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## FOREWORD

Within the context of the Classification and Multiple Use Act, wildlife, and the recreation it provides in various forms is recognized as a major consideration in the management of the public domain lands for their greatest public benefits. These Guidelines have been prepared to assist Bureau personnel maintain and improve wildlife habitat. The material is intended to supplement the Wildlife Management Manual in that more specific information is provided regarding the wildlife resources of Idaho. Some of the material herein has been adapted from material prepared in the Nevada State Office. The Guidelines itself is patterned after a similar publication prepared in Oregon, and we hope the material presented is as useful to districts in Idaho as it has been to the districts of Oregon. We believe these Guidelines will help in the planning and conduct of comprehensive resource management programs for the Idaho BLM lands.

These Guidelines have been reviewed by the various divisions of the Idaho State Office, the BLM Districts, and the Idaho Fish and Game Department. Their comments and suggestions are appreciated.

  
Joe T. Fallini  
State Director, Idaho





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## INTRODUCTION

The Classification and Multiple Use Act provides the means and impetus to achieve true multiple use resource management on the public lands. The maintenance and improvement of habitat necessary to support wildlife populations is a part of multiple use management.

The basic requirement for insuring continuance of adequate wildlife habitat is consideration and planned management of all resources on a routine, day-to-day basis. Maintenance of remaining habitat today through proper management will preclude the need for costly rehabilitation in the future.

Where needed, wildlife habitat improvements are not greatly different from recognized range improvement practices for livestock. Both are treatments to improve the quantity and quality of animal environment, and often, with only slight modifications, the results can be beneficial to a variety of animal species. Detrimental effects can be minimized through consideration and careful planning of wildlife needs. Wildlife habitat development should be integrated with other development projects to the greatest degree practicable, and vice versa.

These guidelines are intended to assist district personnel in consideration of wildlife while implementing the Bureau's multiple resource objectives, including:

- A. To promote management and use of the public lands in accordance with their inherent productive capabilities.
- B. To treat the public lands in accordance with their needs for permanent protection, improvement, and maintenance.



- C. To prevent further damage to the public lands and restore depleted areas to their productive capability.
- D. To rehabilitate the public lands damaged by wildfire for protection of soil and water resources and for reduction of erosion damage.
- E. To control surface runoff in such ways as to promote water intake into the soil to provide for plant needs, sustained ground water levels, and to minimize downstream damage.

#### GENERAL GOALS

The objective of wildlife management on the public lands is to maintain through cooperative efforts the optimum numbers of wildlife consistent with the forage available and to keep population sizes in balance with the needs of other public uses. Special consideration will be given to (1) preservation of an endangered species where a special reservation of habitat may be necessary, and (2) protection of certain key range areas where survival of a game species requires that positive measures be taken to save the wildlife and range resources.

Basically, wildlife management consists of: (a) recognition of the species to be benefitted or controlled, (b) determination of desirable and compatible population levels, (c) knowledge of the species requirement, (d) delineation of population limiting factors; (e) implementation of plans to neutralize most serious limiting factors; (f) control of undesirable or overabundant species, and (g) integrated management of soil, water, and vegetative resources and all uses dependent on these resources.



## COOPERATION

Wildlife populations, with few exceptions, are the responsibility of the states, whereas the Bureau is directly concerned with protection, development, and management of the wildlife habitat on the public domain. Cooperation and coordination with the Fish and Game Department and other agencies and groups is necessary for successful wildlife management. Both the BLM Manual and the Taylor Grazing Act are specific in allowing for cooperative agreements pertaining to wildlife between the Bureau and the Fish and Game Department, other Federal agencies, educational institutions, private groups, research agencies, etc. Permissible cooperative effort includes research, improvement and development projects, provision of resources to be studied, establishing and maintaining projects, etc.

Suggested types of cooperation by agencies include the following:

Fish and Game Department: Sources of facts regarding all fish and wildlife species; various wildlife management plans such as population controls, public access, land classification, water filings, range condition studies, habitat improvements, evaluation of range improvement practices; public information, wildlife training; and wildlife research.

Bureau of Sport Fisheries and Wildlife: Appropriate research projects; monitoring and evaluating effects of pesticide programs; migratory waterfowl habitat management and research; impact studies on water development projects; and predator and rodent control work.

U. S. Forest Service: Research on habitat improvement work; production of planting materials; exchange of research information; development of needed tools and equipment; and coordinated management of contiguous lands.

Soil Conservation Service: Soil testing; testing of vegetative species; fostering wildlife habitat considerations on private lands which influence public lands.

Agricultural Stabilization and Conservation Service: Encourage private operators to participate in ACP practices beneficial to wildlife; assist in evaluation of ACP practices to determine their effect on wildlife resources of the public lands.





Sportsmen's organizations should be kept informed of Bureau programs affecting wildlife. It is also possible for the Bureau to enter into cooperative programs of habitat improvement with such groups.

District advisory boards, and particularly the wildlife representative, should be kept fully apprised of wildlife problems, plans, and developments, and their cooperation and interest should be encouraged.

#### LAND STATUS

The Land Conservation Policy Statement of February 14, 1961, by the Secretary of the Interior establishes a public interest test for all transfers of land out of Federal ownership. In part, it states:

2. . . . Leases, sales or other disposition of public lands will not be made unless the lease or disposition will serve a sound public purpose. . . 4. Lands which cannot be properly developed under existing public land laws. . . will, wherever feasible, be retained in Federal ownership, pending the enactment of appropriate legislation.

Recently enacted and anticipated public land legislation is expected to result in long-term, sustained Federal administration of a majority of the public lands. Findings and recommendations of the Public Land Law Review Commission are expected to affirm and direct future administration of the public lands.

The Classification and Multiple Use Act, P.L. 88-607, specifies the designation of public lands into one of four categories: Type I, Best-blocked Areas; Type II, Fragmented Areas; Type III, Special Cooperative Areas; and Type IV, Transfer Areas. Public land classification has as an objective the land tenure adjustments necessary to development of a sustained and coordinated resource management program on those lands whose greatest public benefits can be best realized under administration by a public agency.



For those lands to be retained under public administration, the establishment of Planning Units will permit the detailed analysis and comprehensive planning necessary to accomplish multiple use management objectives.

The discretionary function of classification of vacant public lands must precede allowance of entry. The Bureau's own knowledge of the Fish and Game Department's requests signifying interest in the lands as wildlife habitat must be considered for those public lands for which entry applications have been submitted or for which any classification action or other determinations authorized by statute take place. Recordation of these considerations is to be encompassed in the Unit Plan records. The classification procedures of 43 CFR 2411 provide for the serving of classification decisions on interested agencies. Copies of classification decisions will be served on the Department of Fish and Game where land investigations or the Unit Plans indicate importance as wildlife habitat. The Fish and Game Department is a direct source of the wildlife resource data needed for incorporation into the Unit Plan records.

Classification for retention and land use adjustments are appropriate for areas having special significance to wildlife or its management. Crucial game ranges, key migration routes, choice fish habitat, or areas controlling access to harvest areas are examples of areas that should be designated for retention and management by a public agency because of their value in serving the public interest.

In the land classification procedures, the potential of all land segments must be considered from the following aspects:

- a. their importance for exchange to consolidate land ownership pattern to facilitate planned management programs.
- b. their suitability for development under the Recreation and Public Purposes Act.
- c. their present and potential importance as wildlife habitat.
- d. their potential for providing access to other areas.
- e. their significance to programs of other Federal, State or local agencies in the area.



- f. the needs of special interest groups, such as recreation and wildlife organizations.
- g. transfer of title if not needed for Federal land programs.

### WILDLIFE SPECIES

The principal wildlife species to be considered in Bureau of Land Management habitat plans for the State of Idaho are:

- Big game: antelope, bear, bighorn sheep, elk, moose, mountain goat, mule deer, and white-tailed deer.
- Small game: cottontail rabbit, chukar partridge, Hungarian partridge, blue grouse, ruffed grouse, sage grouse, sharptailed grouse, spruce grouse, Merriam's turkey, mountain quail, valley quail, mourning dove, ring-necked pheasant.
- Furbearers: various species.
- Waterfowl: various species.
- Game fish: anadromous, trout and warm-water species.
- Non-game: bald and golden eagle, bobcat, cougar, coyote, fox, jack rabbit, raccoon, song birds.

### WILDLIFE MANAGEMENT

Management of resident fish and game animals is the responsibility of the Idaho Fish and Game Department. Much of the approximately 12 million acres of BLM land in Idaho provides important habitat for the various fish and game species. To adequately serve the public interest, it is obvious effective cooperation should be maintained at all levels of the Bureau and the Department.



They can supply technical information and details concerning fish and game species, population or trend estimates, sex and age composition data and harvest estimates for most game species, and can locate game concentrations by season of use.

Waterfowl are protected by the Migratory Bird Treaty Act under regulations adopted by the Secretary of the Interior and administered by the Bureau of Sport Fisheries and Wildlife. States may enact more restrictive but not more lenient regulations. Both the Federal and State agencies manage waterfowl habitat. State developments are often accomplished with the assistance of Federal Aid funds.

Under agreement with the State of Idaho, the Division of Wildlife Services, Bureau of Sport Fisheries and Wildlife, assumes responsibility for control of predatory animals and birds--which by law in Idaho include mountain lion, wolf, coyote, lynx, bobcat, jack-rabbit, skunk, weasel and starling. Control work is financed by a combination of federally appropriated funds and monies contributed by the BIM State Advisory Board, County commissions, the Idaho Sheep Commission and by state law, the Idaho Fish and Game Department.

The Division of Wildlife Services maintains a field staff effective in all counties of Idaho and is primarily responsible for control of predators and rodents on BIM lands. Where it is determined to be necessary for the protection of resources of BIM lands, the services of the Division of Wildlife Services may be requested. District personnel of the two agencies should collaborate closely to insure that conflicts with various interests using the public lands are minimized. District managers should exercise any necessary regulation of the control methods used. The "Agreement for Placement of Lethal Baits for Predatory Animal Control" form (Illustration 9, Vol. IX part 8) should be utilized in accordance with manual instructions.

It is necessary to have a hunting license, or in the case of non-residents, a nonresident nongame license in possession to hunt or kill predatory animals. No bounties are paid by the State; however, some counties and livestock associations make bounty payments. During the last several years, there has been increased interest in hunting of predators as a sport. We should encourage such recreational hunting of predator species; however, everyone should be aware that eagles, hawks and owls are protected by law.

#### WILDLIFE HABITAT MANAGEMENT

Management of wildlife habitat is largely a responsibility of the landowner or land-administering agency. The principal wildlife





needs are acceptable food, water and shelter distributed so as to be available. A climax vegetative condition may be the preferred or necessary habitat type for some wildlife species, as in the case of the sharptailed grouse, the bighorn sheep, or mountain goat. More often certain intermediate stages of succession provide the best habitats as in the notable examples of ruffed grouse or white-tailed deer. Other animals seem adaptable to such a variety of vegetal conditions that opinion is not unanimous, as is the case with antelope.

Because a species inhabits a certain environment today does not necessarily imply that it is preferred. Neither does the presence of a species signify necessarily that the habitat is in the best condition for that species. Winter collections of deer stomach samples containing conifer-tree needles should not be construed as indicating preference, palatability or quality. Because a species exists under scarce water availability, one should not assume the water supply is adequate.

Habitat management consists, in part, of determining and achieving the best environment for maintaining optimum wildlife population levels. Like a chain, habitat is only as good as its weakest link. In Idaho the weak links of the habitat chain are apt to become most apparent (1) during and immediately following the most unfavorable climatic season--winter and (2) during the reproductive and initial rearing period. Correction of habitat deficiencies--population limiting factors--returns high dividends.

Existing habitat conditions can be improved by achieving adequate hunter harvest and effective law enforcement to protect both the animal and its habitat.

Some of the principal habitat requirements of game and fish are considered below.

Small Game Habitat: Dense, brushy cover is essential for a great variety of small game species, particularly during the winter periods when non-woody vegetal species are not present in the habitat. Cottontail rabbits, ruffed grouse, valley and mountain quail and sage grouse are associated with brushy areas the year round. Chukar partridge and sharptailed grouse utilize more open country, but are always close to brushy areas. Sharptails and Hungarian partridge favor bunchgrass ranges contiguous to brushy draws, rimrocks, creek bottoms and similar habitat often of low economic value.

Young birds require considerable moisture or free water. Moist or wet areas also support a wide variety of vegetation providing fruits, seeds, and green leafage sought as food by all quail species, Hungarian and chukar partridges, sharptailed and sage grouse, mourning doves, ruffed grouse and other species.



A variety of succulent vegetation also harbors an abundance of insects that are important to young birds as a source of rich protein.

During severe winter conditions of prolonged deep or crusted snow considerable stress is exerted on all small game species. During such periods, availability of seeds and fruits is vital to survival for many species and is best provided by shrubby species which also provide protective cover from storms and predators. Sage grouse diets during such periods consist of almost 100 percent sagebrush leaves.

Virtually all game birds depend heavily upon residual (last year's) grass cover for nesting sites each spring. The current year's grass is not yet present at the time most nesting occurs. Thus, range management has an important bearing on the availability of suitable nesting sites for game birds. Upland game birds also need adequate residual grass cover in the fall and winter for food, for escape cover, and for roosting sites.

The most beneficial habitat improvements for upland game birds are provision of water and green succulent plants. For the latter, legume species are excellent and species suitable for desert, foothill, and timbered mountains are available. Certain upland game species have special requirements during breeding seasons. Strutting and dancing grounds are necessary for sage and sharptailed grouse, respectively. Ruffed grouse require drumming logs. Wild turkeys require limby, open-topped trees for roosting.

Waterfowl Habitat: Large concentrations of waterfowl occur at numerous well-known areas in Idaho. Many of these are managed intensively by either the Department of Fish and Game or the Bureau of Sport Fisheries and Wildlife. However, many small areas scattered throughout Idaho furnish habitat whose total is significant to annual waterfowl production. These small areas are important as nesting and brood rearing habitat and feeding and resting areas during migrations.

The most common nesting species in Idaho are the Canada goose and such ducks as the mallard, widgeon, pintail, green-wing and cinnamon teal and wood duck. Islands in the larger rivers and reservoirs and the larger marsh areas are most commonly used by Canada geese for nesting. The ducks nest close to any water areas--ponds, rivers, marshes, canals, etc. Wood duck nesting is confined largely to the Panhandle Counties of northern Idaho and in some areas there they are the primary nesting species.



A stable, or at least not increasing, water level during nesting season is a prime requisite for waterfowl nesting. Water is needed near nesting areas until the young are able to fly. Temporary ponds which dry up in late summer are often prime producers of ducks if the ponds are located near permanent bodies of water to which the broods can move prior to being able to fly.

Vegetation close to the water to provide nesting and protective cover and food is also necessary. Submerged and emergent vegetation in the water area is desirable. Such aquatic vegetation requires stable water levels. Some of the most valuable waterfowl foods are provided by species of Carex, Scirpus, Potamogeton, Polygonum, and Echinocloa. Most of the important waterfowl food plants are palatable to and even sought by livestock, and protection must be provided. Controlled livestock use is desirable to keep vegetation from becoming so dense and rank that waterfowl cannot use it.

On Bureau lands, protection of existing habitat from drainage and overgrazing represent worthy areas of endeavor. Stabilized water levels should be achieved where possible. On potentially large projects, management by the Fish and Game Department or the Bureau of Sport Fisheries and Wildlife may be desirable for maximum development.

Big Game Habitat: The elk, moose, mule deer and white-tailed deer are locally migratory. Characteristically, this is an elevational movement correlated with seasonal weather cycles. The animals move out of the higher and usually forested areas with the first severe fall storms, remain on lower elevation areas during winter periods and then drift back to higher elevations in the spring when snow melts and new vegetative growth develops.

Many former winter range areas for big game animals have been usurped by ranches, farms, highways and cities, and the big game animals are generally restricted to foothill areas.

While spring, summer and fall ranges are extensive, winter ranges are confined areas, often representing less than ten percent of the total population use area. Because animals are often required to use the winter range for about five months of the year, competition for forage becomes keen. Where deer must occupy the same range with elk or moose, there is direct competition for all food supplies. In many areas, however, moose and elk winter at higher elevations than deer, thus reducing competition for food. But where competition is prevalent, the deer population suffers first and most.



Within the deer herd itself severe competition occurs on inadequate ranges. Under these conditions, the fawns and the mature bucks are the first to disappear from the population. Mature bucks go into the winter period in poor condition as a result of the breeding season. The fawns have never had a chance to accumulate food reserves in the form of fat deposition.

Less variety of forage species is available on winter ranges, than on summer ranges. The concentration of animals results in increased utilization of shrub species, and grasses and forbs are consumed when available. On southern Idaho winter ranges, bitterbrush is the most preferred and staple species. Often bitterbrush and big sagebrush occur as a mixed stand, and on such sites both species are well utilized. Studies show, however, that animals make limited use of big sagebrush when restricted to it. Extensive stands of big sagebrush without palatable browse species intermixed with it are not preferred winter habitat. Sagebrush is, however, an important emergency food on ranges where animals are concentrated during periods of severe winter weather. Low sagebrush (A. arbuscula) is considered more palatable. Juniper and the rabbitbrushes rate low in palatability and digestibility.

A California-Oregon study of an interstate mule deer herd over a four-year period found the following utilization-composition relationship:

	<u>Percent Composition</u>	<u>Percent Utilization</u>
Big sagebrush	38	8
Bitterbrush	8.5	35
Juniper	1.9	-

Palatable and important browse species of southern Idaho include bitterbrush, mountain mahogany, Prunus species, service berry, willow, Populus species, elderberry, Erigonum species, snowberry, winterfat, and others.

In northern Idaho the white-tailed deer, elk, and moose adhere to the same seasonal and elevational migration patterns as previously discussed. Generally the species do not intermingle as commonly as on southern Idaho winter ranges. However, when food becomes scarce, the larger animals can travel in deeper snow, reach higher and dig deeper than deer, and deer populations may be eliminated from ranges of limited food supplies.





Winter range foods of northern Idaho vary considerably from those of southern Idaho ranges. Service berry, red-stemmed Ceanothus, willow, dogwood, mountain maple, snowberry, *Prunus* species and western redcedar are common and staple winter foods in northern Idaho.

Green grasses and forbs are utilized commonly as they become available in late winter or early spring. Deer and elk feed in grain and alfalfa fields and sometimes become quite dependent on haystacks. However, artificial feeding has never proved to be a practical technique for game management.

The most common deficiency of winter range areas is their depleted condition. The annual forage production of palatable species is minimal and new plants are scarce or lacking completely on overutilized ranges. The winter ranges are often also the spring-fall ranges for livestock. Given the opportunity, cattle will take green grass in preference to browse species while deer will use grasses only as a supplement to a browse diet or when browse is in short supply. In the spring the nutritive value of browse is low and the green grass is taken quite readily. The competition between deer and livestock increases as both species of animal become overnumerous and the range deteriorates. Because of their food habits, restricting livestock to spring and early summer, not fall use, favors browse species on these ranges. Proper management of both deer and livestock is by far the most important and practical approach to meeting the needs of a deer herd. Recovery of depleted ranges is a slow process, and the more severe the condition, the slower the rate of recovery. Protection of remnants of desirable browse stands, and browse-range improvement through management are fundamental needs of our deer winter ranges. Here again, it should be repeated: habitat improvement is not and should not be considered as a substitute for proper range management, and without proper range management, expenditures for habitat improvement are largely wasted.

Pronghorn Antelope: Antelope are widely scattered throughout southern Idaho, but much potential range remains unoccupied and larger populations and better distribution are possible. Basic habitat requirements are not fully known, but there seems to be a preference for ranges having a great variety of grasses, forbs and low shrubs. Some small groups occupy juniper or pine forests, generally near the edges, but low sagebrush-grass ranges having unrestricted view are typical. The low sagebrush type is the one most commonly occupied in southern Idaho. Rangelands with a great diversity of forage types attract and consistently maintain more antelope than extensive areas of single forage type.



The typical short-grass plains with low growing shrubs and abundance of forbs support the nation's largest populations. Extensive stands of big sage are not favored.

In a study of seasonal food habits of antelope, browse species constituted 68.8 percent of the volume consumed followed by 20.9 percent forbs and 7.0 percent grass. Grass was utilized the greatest in volume during fall (13.2 percent), then spring (9.2 percent) followed by winter (5.7 percent).

For browse species, antelope show a preference for the low growing Artemesia species - arbuscula, cana, and nova as important winter food species. Bitterbrush is common in the diet. Forbs are a dominant summer food source. Alfalfa, sweet clover, and other legumes and growing grains are attractive whenever available.

Apparently, antelope are able to live without free water, but drink it year-round if available.

Fences constructed in antelope country must be of a design that will permit normal antelope movement. Instruction Memorandum No. 65-525, December 7, 1965 and Change 1, March 9, 1966 provide specifications to be followed for various type fences and structures to be constructed where antelope are involved. In essence, the specifications are as follows:

4 strand barbed wire fences - bottom wire 16" above ground, with other 3 wires at 6", 8", and 12" spacing

3 strand barbed wire fences - bottom wire 18" above ground, with each of other 2 wires at 12" spacing

5 strand barbed wire fences - bottom wire 5" above ground, with other 4 wires at 6", 7", 8" and 6" spacing

Woven wire fences - 26" netting and one barbed wire 4" above netting. In addition, 32" netting with no barbed wire above or below may be used.

The Instruction Memorandum also includes a cattleguard-type structure for installing in fences so antelope can cross. Passage of antelope through fences is being subjected to continual study and revised instructions can be expected.

The most beneficial habitat improvements for antelope are (1) establishment and maintenance of green, succulent and palatable forage plants and (2) water development.



Bighorn Sheep: The California bighorn sheep was introduced into Owyhee County in the fall of 1963. Under agreement with the Bureau, the Idaho Fish and Game Department plans to obtain additional animals for transplanting into other BLM-administered areas in the ensuing years. The Rocky Mountain bighorn has always been present in portions of the Salmon District.

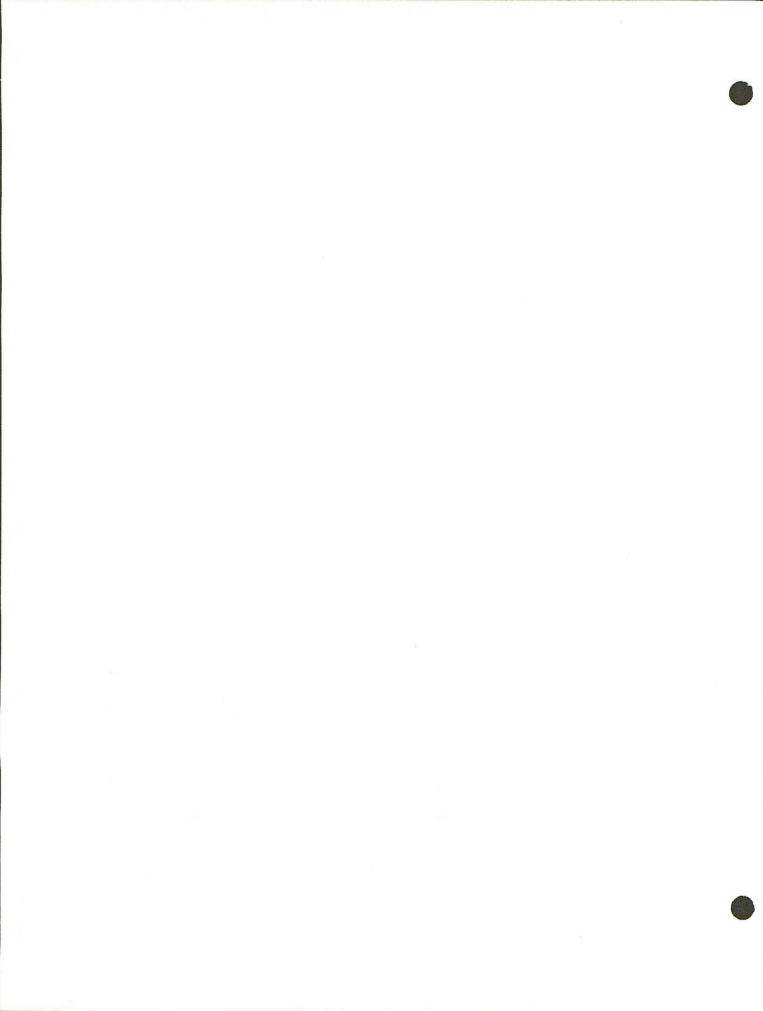
Bighorn sheep, like mountain goats and caribou, are a wilderness species that are intolerant of human disturbance. While many species, such as deer and elk, have expanded their range in many places since the advent of white man, the history of the bighorn sheep is one of gradual retreat.

The California bighorn is adapted to arid conditions. The lamb crop appears to vary greatly with precipitation on desert ranges. Reportedly, lambs never come to water during the nursing period and are completely weaned at four to five months of age. Adults seldom come to water while on green, succulent feed. They can go a long time without water if necessary, and may range as far as 20 miles from the closest water source.

The bighorn sheep feeds on various species of grass, sedges, forbs and browse. Succulence of forage is of primary importance during the long, hot dry periods of the year. The canyon areas of Owyhee County in which releases have been and will be made are precipitous in nature and use by livestock is limited drastically. Therefore, it is anticipated range conditions should be appropriate for their existence. Perhaps one of the greatest threats to their existence is the possibility of transference of infectious diseases and parasites, such as lungworms and scabies, because of contact with domestic sheep. It is thought this aspect, plus range depletion, increase of human activity, and poaching contributed to their extirpation from Owyhee County in the early part of the century.

Fisheries Habitat: The fundamental needs of fish in their aquatic environment include: proper water temperature, suitable chemical composition, adequate food sources, proper spawning facilities, and protective cover. Water quantity and quality requirements must be met if an adequate fishery is to be maintained. In lakes, ponds, and reservoirs a balance must be maintained between food and fish. Management of streams may be more complex, as they are influenced by irrigation, diversions, mining, logging, road construction, channel changes, dams, pollution, etc.

Factors influencing water quality include temperature, oxygen content, pollution and turbidity. These factors influence both food source and fish life. Depth of water and shade affect



water temperatures. Stabilized watersheds are important in reducing erosion and siltation. Channels and streambanks should not be disturbed. Deposition of silt on gravel bars prevents successful spawning and reproduction, and jeopardizes water quality and food production. Pollution can reduce oxygen content of a body of water below the amount necessary to maintain fish and aquatic organism life.

Water quantity is the requirement for a continuous stream flow or reservoir level adequate to sustain fish life. It is important to maintain the natural, normal pattern of stream flow to which the species of fish are adapted. Adequate flows are essential to the production of aquatic foods. In general, the carrying capacity of a given stream is dictated by its minimum flow.

#### WILDLIFE HABITAT IMPROVEMENT - GAME

Most habitat improvements for wildlife applicable to BLM ranges are not materially different from recognized range improvement practices for livestock. Fencing, vegetative manipulations, and water developments should be planned and conducted with consideration for special wildlife habitat requirements. Suggestions concerning these needs are discussed below.

Efforts to improve habitat quality and thus carrying capacity should be concentrated first on those weak links of the overall habitat recognized as major factors in limiting population size and well-being. These are important sites known to be utilized by the species, such as deer and antelope winter ranges, or, for birds, the areas around water such as seeps, springs, streams and ponds. After the potential of such areas has been developed, then other areas or factors should be planned for to aid species distribution or extension of range. As important as the improvement of habitat, is the subsequent management program to maintain or further improve the development. Without proper management, the improvement effort and money are wasted.

Only a small percentage of the total federal range within the districts provides critical deer winter range. The amount varies in the different districts from an estimated 9 to 28 percent. Probably only about 5 percent or less of the BLM-administered land is critical from the game bird standpoint.

Fencing: Fences used as exclosures to protect key areas are effective and often the only practice needed to insure adequate habitat conditions on land or water. Properly designed and con-





structed fences will protect: 1) existing or potentially good habitat on selected sites from excessive livestock use, for example, stream banks, reservoirs, ponds, springs and sloughs from trampling, pollution and overgrazing; 2) new developments from livestock use while permitting use by wildlife, for example, seeding of forage plants for wildlife; and 3) study plots and demonstrations. No gates should be provided unless essential to the development and management. Facilities for livestock watering, if necessary, may be provided by pipe and tank installations. Enclosures around water should be large enough to permit growth of food and cover plants for small game. Any recreation potential should also be considered.

Range fences should not act as a barrier to free movement of antelope. The Director's policy statement of May 13, 1959, includes the following excerpts: ". . . fencing practices which may adversely affect or endanger wildlife would not be in keeping with the multiple-use principles of land management and must be avoided. . . . it should be a standard practice to publicly announce plans for Bureau fencing programs, and . . . where big game or other wildlife species may be affected by such activities, prior consultation should be had with State Game Department officials. . ." If agreement on the program cannot be reached, the matter will be referred to the State Director.

The U.S. Bureau of Sport Fisheries and Wildlife, upon request from the Interstate Antelope Conference of 1962, has studied the problem of fences on range lands occupied by antelope. Their recommendations, including later modifications are summarized on pages 12 and 13, preceding. Fences may influence antelope movements due to the animals' tendency to drift with a fence rather than cross it.

Tests completed in Wyoming indicate that a 4-wire fence with posts six feet apart and wires taut should keep antelope out of pastures, while fences with posts 16 feet apart and certain wire spacing let antelope pass through.

Vegetation: Manipulation of vegetation to produce the best combination of quality and quantity of forage and/or cover plants for the species to be benefitted is the goal. This may be done solely in consideration of wildlife, usually by seeding forage or cover plants, or it may be a multi-purpose project which includes wildlife benefits.

Brush Control: Wildlife species require suitable vegetative composition for protective cover and food. Brush often provides both and is one of the most desirable forms of vegetation for



many wildlife species. Sagebrush is absolutely necessary for sage grouse survival. Antelope utilize gray and green rabbitbrush as food, but percentage totals consumed are low. However, an extensive solid stand of big sage, Artemesia tridentata, is not a preferred habitat type for either mule deer or antelope, and, though it is an important emergency food, some other sagebrush species are more desirable. Bitterbrush is a preferred food of both deer and antelope. Mixed stands of big sage and bitterbrush are usually well utilized and are an important type on deer winter ranges. For these reasons, sagebrush spraying or other means of brush control should be confined to extensive, solid stands of big sagebrush or rabbitbrush or combinations of these where valuable species such as bitterbrush are absent and where no important game species, such as sage grouse, are endangered. Treatment should be withheld at this time, from any and all mixed stands containing an appreciable percentage of bitterbrush, even though some progress has been made in selective control. The important, designated big game ranges should not be treated at present.

In accordance with our Memorandum of Understanding with the Idaho Fish and Game Department we are to notify the Department by written communication concerning all future shrub eradication projects on Bureau lands in Idaho while such projects are in the planning stage. Idaho State Office BIM Manual Supplement 6620, Wildlife Habitat, Para. 6624.3 details procedures to be followed in coordination of brush removal projects with the Department. For each such project we are to obtain from the Department a written communication concerning the estimated effect of such shrub eradication on wildlife values in the area concerned.

If some portion of the designated ranges is a key area in a proposed range rehabilitation project, the matter should be discussed between the local representatives of the Department and the Bureau. On-site inspection by all interested parties and thorough discussion of plans is desirable in these instances. If agreement cannot be reached, the matter will be referred to the State Directors of the two agencies.

Areas known to be particularly favored by sage grouse should be given special consideration. The principal strutting, nesting, and wintering grounds of these birds should be modified with caution, or treatment deferred until we become more knowledgeable on techniques and effects of treatment.

Careless or unnecessary spraying of sites or waters valuable to wildlife and fish should not be permitted. Instruction Memorandum No. 64-468 is explicit in delineating areas that



should not be subjected to chemical spray operations. In recognition of the consideration needed for wildlife habitat, it is urged the following instructions be issued to spray contractors: "Bidders are advised that where considerations for the protection of wildlife habitat is required, care will be taken by the Government to avoid drifting spray into such habitat areas. Where the District Manager designates areas such as rims, canyons, stream bottoms, and other areas as valuable game habitat, flights will be made parallel to the areas for a sufficient lateral width to protect them from drifting spray, and no spray will be applied within a reasonable distance of such habitat as determined by the project Officer-in-Charge."

Helicopters may be required in areas where adequate control of spray could not be achieved with fixed-wing aircraft.

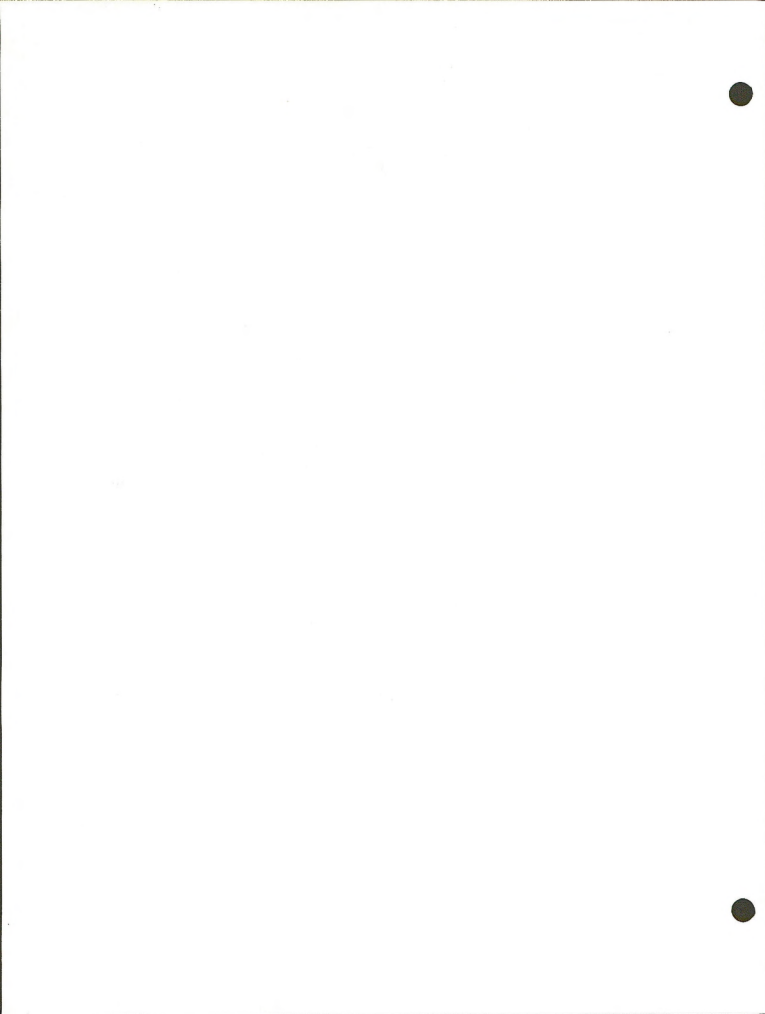
For protection of wildlife habitat, sites supporting valuable browse species and areas inaccessible to or of low value for livestock should be excluded from spray treatment. The U.S. Public Health Service and the Idaho Department of Health are concerned whenever chemical sprays are applied near live streams.

Chaining of juniper, pinon and mature stands of mountain mahogany followed by seeding of the area to grass, forbs, and shrubs has been a successful procedure for rehabilitating many critical game ranges in Utah, Colorado and other states.

Citizen-initiated burning has been extremely destructive of wildlife habitat in many areas of Idaho. Perhaps controlled burning could be beneficial on some sites, but considerable research and experimentation is needed before permitting or inaugurating large scale burning projects. Every effort should be exerted to control wild fires on important wildlife areas to reduce loss of these areas.

Range Seeding: Wildlife species utilize grass for cover or food in varying degrees. Grass does not normally comprise a large percentage of the diet of either deer or antelope, but many of the studies have not considered the total amount of various food forms available. Grass is sought by both antelope and deer during late winter and early spring when they congregate on new green growth. Much evidence indicates that in the plains states where antelope are most abundant, they feed largely on grass. There may be a significant correlation in the reversion of bunch grass ranges to sagebrush, and the decline in antelope populations.

Seedings of small size scattered intermittently throughout their range should improve the habitat for antelope, deer and various species of upland game birds. However, replacement with grass of shrubs that support big game species during critical winter months should not in any way be considered a practice beneficial



to wildlife.

Grass-legume mixtures, or legumes alone should be seeded primarily for wildlife on selected sites and fenced to control livestock use. Cattle use is more compatible to wildlife needs than sheep use as sheep select the legume rather than the grass species. Legume fields are especially attractive nesting and brood-rearing habitat due to their providing of excellent cover, succulent forage, and an abundance of insects. Nomad alfalfa appears to be one of the better species for the limited rainfall areas of southern Idaho.

Browse valuable for forage may be seeded on big game winter ranges. Selection of adapted species, seed collection, site selection, planting techniques, and management methods all present problems, though each aspect has been subjected to research and experimentation in recent years. Sufficient information is available to plant certain sites with certain species, particularly bitterbrush, with hope of modest success. Additional species are under trial for some sites not adapted to bitterbrush. Early efforts should be restricted to study plots or demonstration scale plantings.

Water Developments: Most wildlife species drink water when it is available. Some species, and especially their young, require it. Water contributes to better distribution of game animals and utilization of the range, just as in livestock management. Small game, particularly young birds, are more abundant around water.

Livestock-type waterholes and developed springs and seeps are excellent wildlife habitat improvements. Cooperation of the Fish and Game Department should be sought in locating and developing such units primarily for wildlife.

Where these more general type practices are not possible or practicable for upland game birds, and water development is desired, cisterns may be installed. With cooperation from the Fish and Game Department, self-filling units designed for this purpose could be made available. The Department is also interested in cooperating in installation of devices at stock tanks which make water available to birds. All open tanks and troughs should be provided with ramps to enable birds and small mammals to utilize the water without drowning.

A new and inexpensive technique is now available for creating pot holes on any BLM lands where water tables are high. This technique employs a mixture of ammonium nitrate and fuel oil to provide ample blasting power for creating small duck production pot holes easily, safely, and at no great expense. Detailed instructions on the use of this new technique are available through the State Office.





Some ranges that may be unavailable to livestock due to lack of water can be utilized, at least seasonally, by big game. Before developing water on such areas, if these are critical ranges, consider the possible adverse effect on wildlife.

The average optimum distances which should separate available water sources for various game species depends upon a number of local factors and no definite figures are widely applicable. Some years ago, western game departments were polled on this subject, and the consensus of replies is shown below (partial list).

Valley quail	1/2 to 1 mile
Sage grouse	2 to 2-1/2 miles
Deer	4 to 5 miles
Antelope	5 to 10 miles

#### WILDLIFE HABITAT IMPROVEMENT - FISH

This is more a matter of restoration of the original, natural state, now so largely despoiled by man, than it is to improve on nature.

The fundamental goal is maintenance of a stable and adequate supply of water of good quality. Clean water of a chemical composition and temperature suitable for the desired fish life and its food species is necessary. In addition, the stream bottom must provide facilities for spawning and protective cover. Where man is providing proper watershed management, habitat improvement is usually not needed.

Siltation and pollution are our major destroyers of fish habitat. Stream management is dependent upon watershed conditions. Protection of watersheds through proper land use is the basic remedy. Proper use involves erosion control by maintaining adequate vegetative cover on the land. Many activities of man contribute to the decline of fish habitat. A few of the most important ones affecting our streams and impoundments are discussed below.

##### Streams

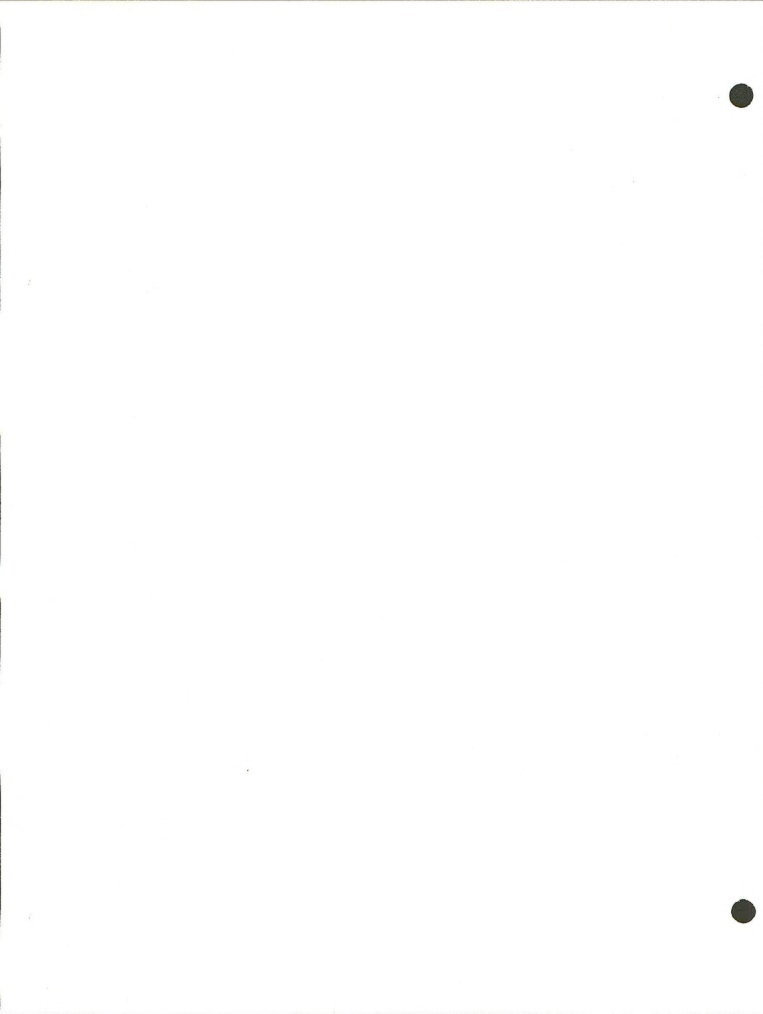
Road Construction: Damages are usually due to siltation disturbance of gravel beds, straightening of channels, jams of logs and debris, and blocking of passage at culverts. Recommendations follow:



- 1) Keep roadways as far as possible from creek channels. Locate on benches or ridges away from streams. Avoid changing or straightening stream channels.
- 2) Plan grades and drainage so that runoff does not enter streams directly. Avoid excessive grades.
- 3) Deposit fill or waste material so as to keep it out of streams even at flood stage.
- 4) Sediment settling basins may be constructed to remove silt from water before it reaches a stream.
- 5) Culvert installation.

Two factors need consideration: a) upstream passage of fish, and b) erosion control. Install culverts at minimum gradient necessary. The maximum acceptable gradient for fish passage is .5 percent on corrugated metal pipe. Where fish passage is important and the grade exceeds .5 percent, bridges should be used. Half culverts, utilizing the natural stream bed as a bottom, are satisfactory if site conditions are favorable. Round bottom culverts are best where extremely low flows are common. Flat bottom culverts are advisable where high flows or steep gradient may cause velocity barriers to upstream migrating fish. The outlets of culverts should be six inches below the natural stream bed. Rock stilling basins or splash pads should be provided at the outflow end to prevent formation of a drop at that point. On steep slopes, downspouts at the discharge end will reduce erosion. The upstream end of the culvert should be provided with a headwall and the adjacent banks should be riprapped. The regional fishery biologist of the Idaho Fish and Game Department should be notified when culvert installations which will affect fish passage are to be made.

- 6) Clean all stream channels above culverts of logs and driftwood for 100 feet to prevent clogging and road washouts.
- 7) Seed cuts, fills and scarred areas to grass, legumes and/or shrubs. Steep slopes especially need to be stabilized.
- 8) Road construction during wet fall and winter seasons may require particular care to minimize erosion.



Road Maintenance: Prevent excessive erosion through proper maintenance of drainage ditches and culverts. Fill and seed wash-outs. Close roads to travel when surface condition presents great erosion danger. Upon abandonment of roads, provide adequate erosion prevention measures; and, if roads are not to be used, take measures to make them impassable.

Logging: Damages are usually due to siltation, jams of logs and debris, disturbance of gravel beds, and removal of streamside cover. Recommendations for minimizing such damage include the following:

- 1) Keep equipment and logs out of streams.
- 2) Keep streams free of logging debris.
- 3) Leave stream-side buffer strips. In addition to keeping the stream clear, this provides shade necessary to maintain proper water temperatures. Hardwoods and young growth, particularly, should not be needlessly destroyed. Ten to twenty-five yard-wide strips depending upon width of the stream are suggested.
- 4) Seed skid-trails and other highly erodable disturbed areas. Construct water-bars to divert water.
- 5) Keep landings out of draws.
- 6) Log storage ponds should not be permitted in stream channels on BLM lands. Ponds constructed to one side with water diverted into them should be used where possible on BLM lands; however, they should not be flushed into streams, but cleaned out with a drag-line.
- 7) Provide adequate drainage for roads and landings.
- 8) Avoid tractor logging on steep terrain. High-lead type equipment, generally limited to coastal areas at present, causes less erosion. A system using portable, cable logging equipment may have limited possibilities.
- 9) On steep terrain leave slash unburned.
- 10) On severe sites timber harvesting should be excluded.
- 11) Logging during periods of wet soil conditions is potentially the most destructive.



- 12) Upon abandonment of roads, provide adequate erosion prevention measures. Construct water bars on main skid roads. When roads are to be closed after logging, take measures to make them impassable. Reseeding to grass and legume species provides soil stabilization and succulent green foods for wildlife, particularly ruffed and blue grouse.

Mining: The various forms of mining activity may ruin fish habitat through siltation, pollution, alteration of the stream bottom, or destruction of the stream channel. Gravel removal may destroy valuable fish spawning beds in addition to the downstream effects.

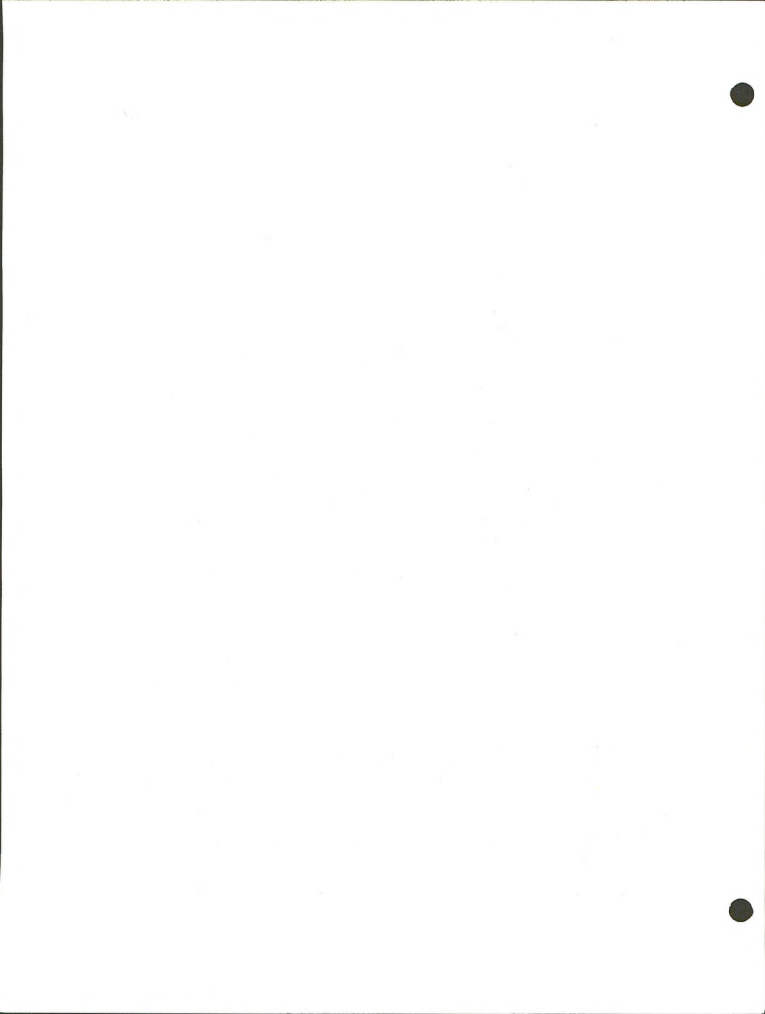
Uncontrolled hydraulic mining may produce excessive turbidity and silting of rivers and streams. Settling ponds may sometimes be installed as practicable protection measures.

Dredge mining has caused major destruction to many Idaho streams. In addition, dredging activities, by their leaving the land virtually upside down, have made thousands of acres of stream-side areas unproductive, unusable, and unsightly. The Idaho Dredge Mining Protection Act (Idaho Code 47-1312 through 1322) established in 1955 as a result of Initiative Measure, curbs much of such despoilation by providing safeguards against destructive and harmful practices common to dredge mining.

A side-effect of mining explorations and activity is the accelerated erosion resulting from low-standard roads. Stream pollution from mine wastes and processing results from some types of operations.

Livestock: Siltation, pollution, excessive removal of vegetation by overgrazing, loss of ground litter, and eroding of banks are the chief harmful effects of livestock upon fish habitat. The obvious solution to all these problems is to provide proper livestock management by means of fencing programs. Stock water can be piped away from the stream.

Reclamation: Diversion of water from streams and obstruction of channels are two types of activity not generally beneficial to stream fishes. Diversion, as for irrigation, reduces stream flow at a season when high temperatures may be harmful to fish life. Excessive diversion may reduce the quantity of water to a point where normal aquatic life ceases. Unscreened, artificial outlets are often a direct source of fish loss. Title 36, Sec's. 1106 and 1107, Idaho Statutes, grants the Fish and Game Department powers to install and maintain screening devices or cause the same to be established and maintained. Idaho law also





requires that anyone constructing a dam or other artificial obstruction across any stream frequented by game fish, or using such an obstruction previously built, shall provide passageway for fish over such obstruction. Examination and approval of all such fishways rests with the Game Commission. (Title 36, Sec. 1104).

During recent years, numerous stream beds have been subjected to application of soil sealing materials such as bentonite. The objective of this practice is to prevent loss of potential irrigation water by seepage through the stream bed. Such practices should not be permitted on BLM lands unless careful study of the site and situation reveals there will be only insignificant or no harmful effect on fishery resources. The practice has its greatest deleterious effect through destruction of the food producing potential of the stream.

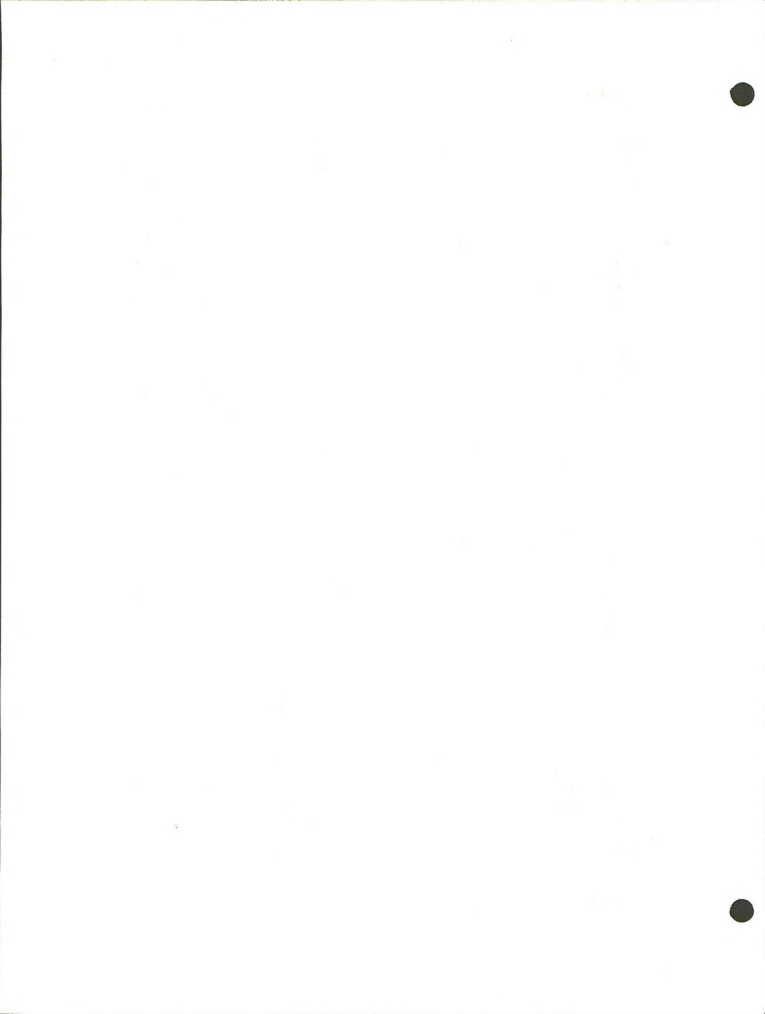
Human Occupancy: Recreational and permanent residential areas and industrial installations may be major sources of stream pollution and siltation. No or inadequate waste treatment results in stream pollution. Soil conservation programs aid materially in reducing the amount of soil washed into streams.

Adequate sanitary facilities should be provided at all recreational use areas, particularly those near water. To prevent water pollution, location of facilities should be dictated by the predicted effect of soil types and gradients at each site. Location is especially important for flush toilets and complex sewage disposal systems. Pit toilets should be at least 50 feet from a well, spring, or other source of water. Water-tight sealed vault toilets present no pollution problems. From an esthetic standpoint, all facilities - tables, fire-places, toilets, parking areas or anything that would interfere with unrestricted movement and vision - should be at least 50 feet and preferably 100 feet from the water's edge. Fire prevention safeguards are also necessary.

We should direct efforts toward determining the amount of recreational use on our public lands, not only in developed camp areas, but also the amount provided by our various wildlife species.

Pesticides: Some commonly used pesticides are toxic to fish and aquatic organisms even when present in minute concentrations. When applications are necessary, suitable compounds and formulations least toxic to these aquatic life forms should be selected. Care in application can minimize losses.

There has been increased concern over the hazard of pesticides during recent years. Because of the dangers involved, instructions have been issued concerning their use. Instruction Memorandum No. 64-531, October 20, 1964, says:



"Pesticides, including insecticides, fungicides, rodenticides and herbicides may be used on BLM protection, rehabilitation, and management programs for conserving natural resources, safeguarding human health and property, and fostering selected plant species. More specifically, chemical agents may be used where necessary to suppress destructive outbreaks of plant diseases, insects, fire, rodents, and other pests for the protection of resource values, and the eradication or control of poisonous and/or noxious plants and economically destructive animals. Chemicals may be used as needed for protecting public health, increasing public safety and comfort, the protection of property, and for compliance with Federal or State quarantine and public health laws. Programs involving the use of chemicals must be limited to those absolutely necessary to meet management objectives and responsibilities. They must clearly pose no threat to human health or fish and wildlife."

All programs involving the use of chemicals must have the approval of the Federal Committee on Pest Control before chemical application is made. State directors and district managers will consult with multiple use interests with regard to proposed chemical control programs as required by Instruction Memorandum No. 64-468 dated September 10, 1964.

#### Impoundments

Many of the comments regarding siltation and pollution of streams are applicable to lakes and reservoirs. The situation here is usually less complex. Pollutants and silt loads may reach high concentrations in impounded waters as inlet deposits accumulate. Turbidity and sediment obstructing light penetration reduce or eliminate plant growth. Reservoirs tend to become shallower and water temperatures rise. The habitat becomes unsuitable for the more desirable fish species. Fluctuating water levels due to heavy run-off periods alternating with drawdowns or seepage and evaporation losses may be problems which can be alleviated. All fish species have certain special requirements for spawning; in some cases the unsuitability of inlet streams may be the determining factor. Heavy growths of aquatic weeds may adversely affect the biological balance of the area as well as impede the fishing. Warm water reservoirs are particularly vulnerable to trash-fish infestations usually resulting from unwise introductions. Eventually this results in practically eliminating the desired species. The remedy is costly chemical treatment. It is particularly important in impoundments to maintain a balance between food and fish. Siltation and pollution are as destructive to aquatic fish-food organisms as to the fish themselves. To repeat: protection of watersheds by proper land use is the basic requirement for maintaining fish habitat.



## STUDIES

Research: The BLM is authorized to cooperate in certain studies, including wildlife investigations initiated by a state agency. Special wildlife problems needing research may be referred to the Bureau of Sport Fisheries and Wildlife upon approval of the Director.

Studies of wildlife species probably are best conducted by wildlife agencies. The Bureau, however, can actively cooperate in such projects by providing land, giving technical assistance, and aid in their establishment and maintenance.

Studies of wildlife habitat can be undertaken cooperatively in accordance with existing or special agreements. Often both the wildlife and its habitat are phases of a single project. The Manual strongly recommends cooperative studies of game ranges with interested land-administering agencies. Cooperative studies often insure better acceptance of results.

Evaluation: A two-part, systematic appraisal of each wildlife habitat development should be made at appropriate times to determine its benefits and shortcomings.

First, the success of the development itself should be determined; i.e., the establishment of a seeding, the brush control achieved on a sprayed site, the filling and water retention of a waterhole, etc. In addition, utilization by wildlife as intended should be determined by spot checking and recording of incidental observations.

The value of a project is often difficult to determine. Evidence of substantial wildlife use should be documented.

The State Fish and Game Department is interested in evaluating our range rehabilitation practices and projects from the standpoint of their effect upon wildlife. Our sincere cooperation should be given this mutually beneficial effort.



## APPENDIX

Several documents, instruction memoranda, and other pertinent information are included in this section of the Guidelines. We believe one of the more important inclusions is a suggested procedure for coordinating wildlife habitat management into a multiple use resource management program.

We will modify and add to the contents of the Appendix as necessary in the future. For the present, the Appendix includes:

Memorandum of Understanding with the Idaho Fish and Game Department

Instruction Memo No. 64-468, Interim Guidelines for Coordination and Conducting of Mechanical and Chemical Vegetative Manipulation Projects to Provide Protection for Wildlife Values

State Office Supplement to BLM Manual 6620 Wildlife Habitat, Para. 6624.3, Procedure for Coordination of Brush Removal Projects with Idaho Fish and Game Department

Planning Unit Wildlife Habitat Administration and Management

Procedures for Coordinating Wildlife Habitat Management into the BLM Multiple Use Program

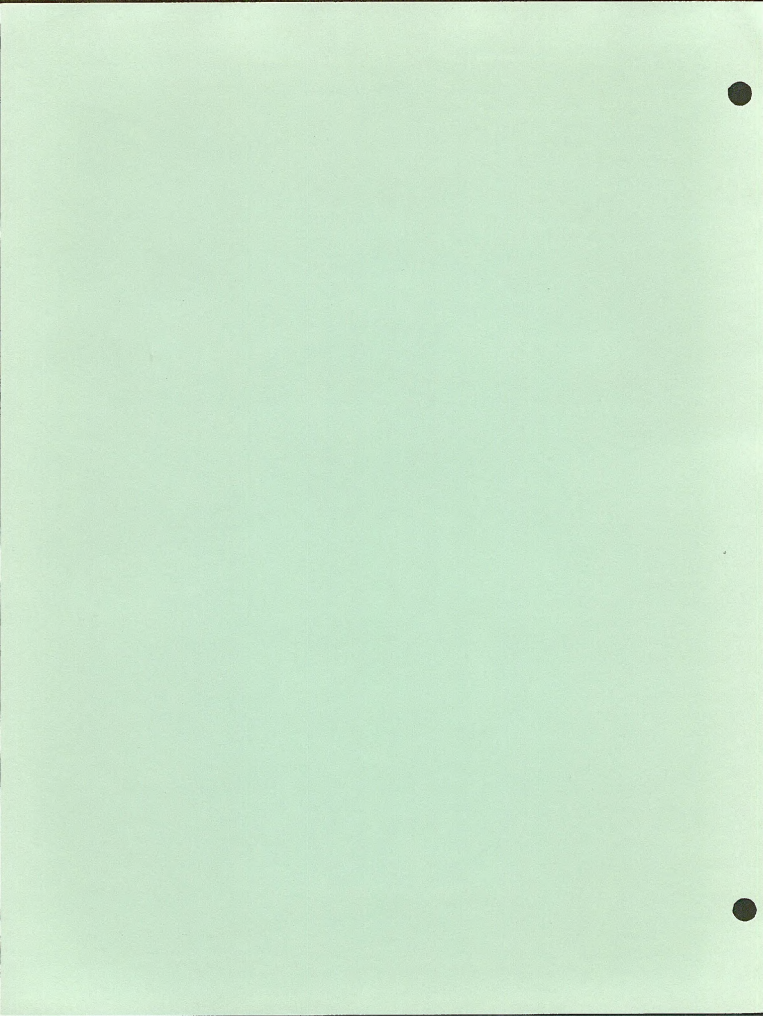
Wildlife Responsibilities within a BLM District

Cooperative Agreement, Wildlife Resource Improvement Project (sample)

Designs for Habitat Improvement Facilities (adapted from Nevada State Office)

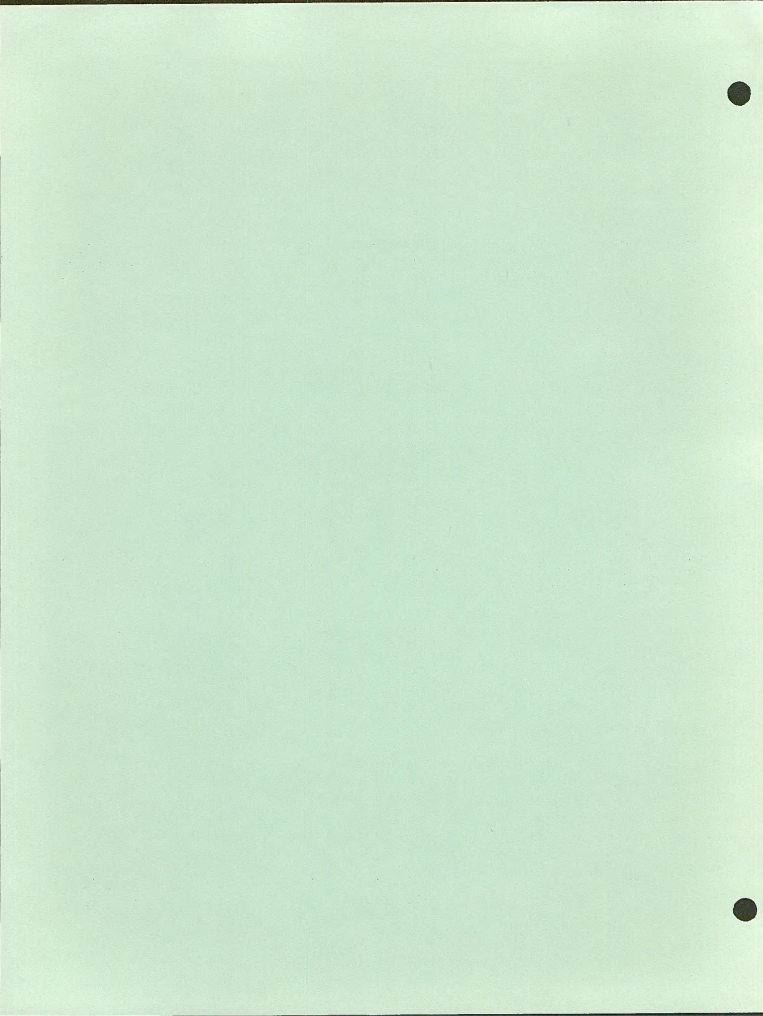
Small Reservoir and Trough  
Multiple Use Spring Development  
Spring Development and Trough  
Spring Development - Sloping Tile







Trough Float Board  
Trough Bird Ladder  
Concrete Tank Bird Ladder  
Charco Pit  
Water Spreading System  
Water Catchment for Birds  
Water Catchment for Big Game  
Reinforced Concrete Dam  
Livestock and Game Range Exclosure



MEMORANDUM OF UNDERSTANDING

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

With

IDAHO DEPARTMENT OF FISH AND GAME

THIS MEMORANDUM OF UNDERSTANDING, made this 28th day  
of November, 1962, by and between the IDAHO DEPARTMENT OF  
FISH AND GAME, hereinafter called the "Department," and the UNITED STATES

BUREAU OF LAND MANAGEMENT, State Office, hereinafter called the "Bureau,"

WITNESSETH, THAT:

WHEREAS, the Bureau is authorized under Sections 2 and 9 of the  
Taylor Grazing Act of June 28, 1934 (48 Stat. 1269) and Title I of the Public Land  
Administration Act of July 14, 1960 (74 Stat. 506) to enter into memoranda of  
understanding with official State agencies to carry out the purposes of these Acts  
and the Department is similarly authorized under the laws of the State of Idaho to  
enter into cooperative agreements and/or memoranda of understanding; and

WHEREAS, the Idaho Fish and Game Department has been created by  
the laws of the State of Idaho to preserve, protect, perpetuate, and manage the  
fish and wildlife resources of the State of Idaho; and

WHEREAS, the Bureau is responsible for the protection and management  
of the national land reserve in the State of Idaho; and

WHEREAS, it is the mutual desire of the Department and the Bureau to  
work in harmony for the common purpose of developing, maintaining, and  
managing all of the natural resources in the best interests of the people of Idaho



and of the United States.

**THE BUREAU AGREES:**

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- (a) To permit the erection and maintenance of structures needed to facilitate fish and wildlife management activities of the Department upon the national land reserve administered by the Bureau, provided such structures conform in character and location with the usual requirements of the Bureau and their intended use is not in conflict with Bureau policy and programs.
  - (b) To practice those forms of land and resource management that will benefit fish and wildlife, consistent with a sound multiple use program.
  - (c) To furnish the Department with copies of reports dealing with fish and wildlife prepared by the Bureau.
  - (d) To consult with the Department prior to activating range improvement projects where fish and wildlife values are involved.
  - (e) Notify the Department by written communication concerning all future shrub eradication projects on Bureau lands in Idaho while such projects are in the planning stage and obtain for each such project from the Department a written communication concerning the estimated effect of such shrub eradication on wildlife values in the area concerned.
  - (f) To recognize the Department as the sole agency responsible for management of the fish and wildlife resources of the State of Idaho.



## THE DEPARTMENT AGREES:

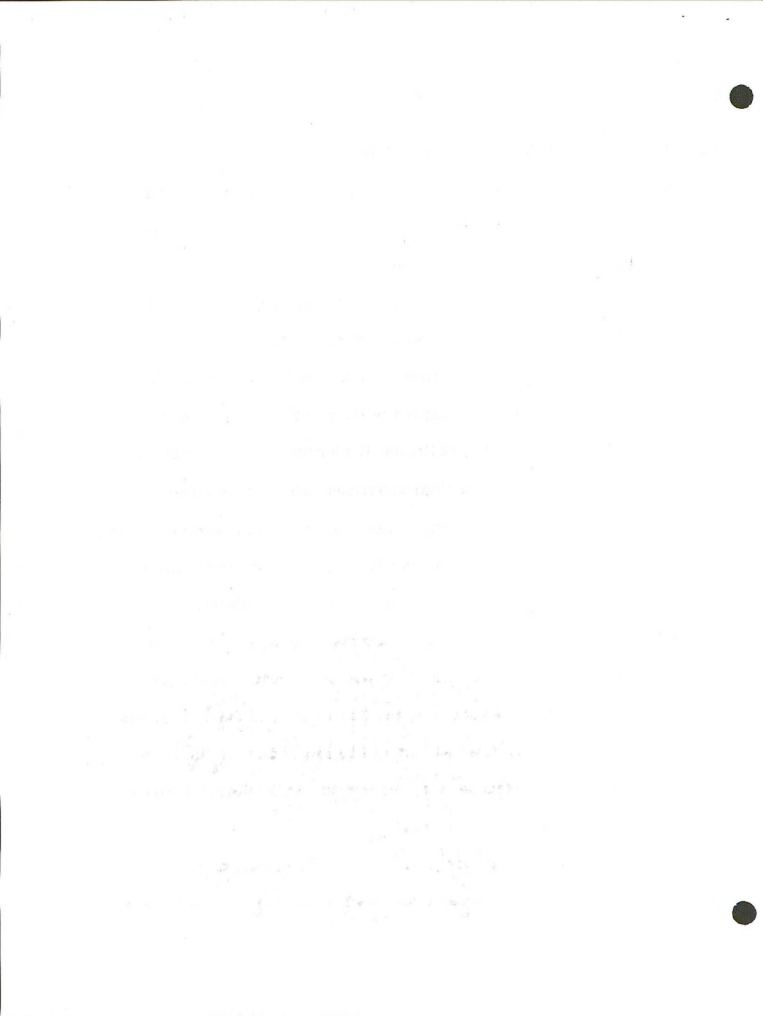
- (a) To submit plans for the introduction of exotic species of wildlife on Bureau lands for study and recommendation by the Bureau before activating such a program.
- (b) To make no use of poisons for the control of wildlife on Bureau lands without the approval of the Bureau.
- (c) To notify the Bureau of changes in regulations or management plans that may influence Bureau programs.
- (d) To erect no permanent signs or structures on the national land reserve and perform no construction or other acts not herein provided for without first securing the concurrence of the State Director or his designated representative; said concurrence to be in the form of a cooperative agreement, special land use permit, or right-of-way, as appropriate.
- (e) To provide the Bureau with copies of game and fish reports pertinent to management of wildlife on Bureau lands.
- (f) To recognize the Bureau as the agency responsible for the development and management of the national land reserves in Idaho.
- (g) To make pertinent information on game populations and game use available to the Bureau to assist the Bureau in making reservation of forage for game animals on Bureau lands.



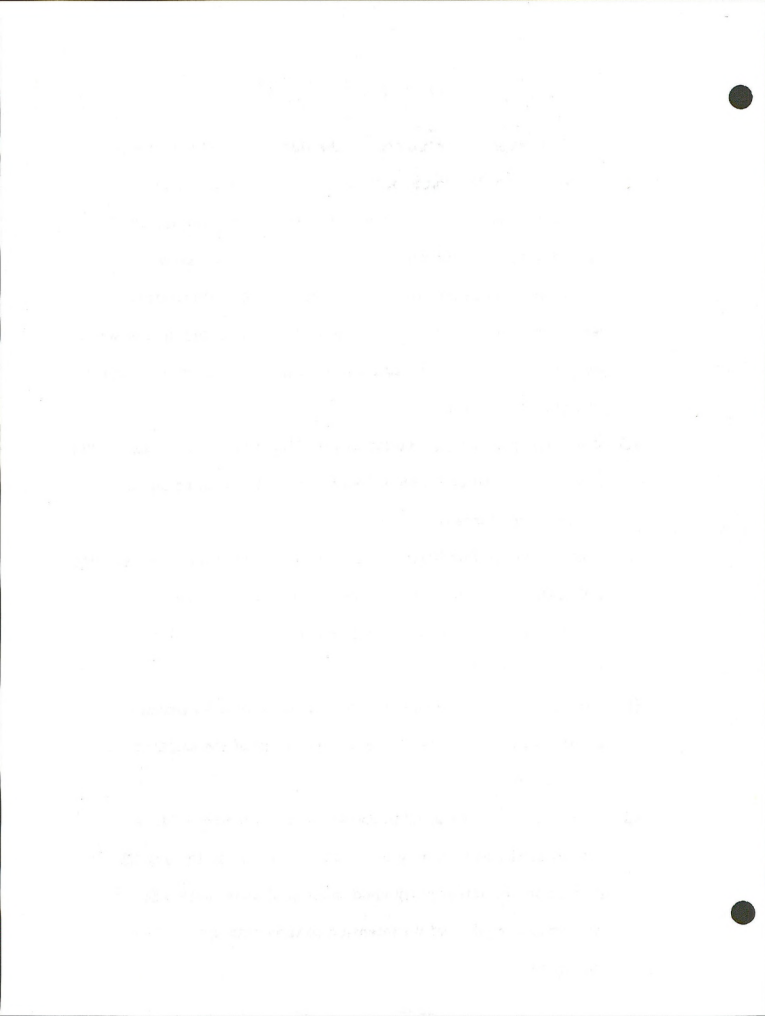


THE DEPARTMENT AND BUREAU MUTUALLY AGREE:

- (a) To cooperate in the restoration, harvesting and general management of wildlife resources of the State of Idaho consistent with the multiple land use program.
- (b) To promote a united approach by all interested parties to the problems relating to wildlife and fisheries management.
- (c) To meet jointly, at least once annually, and more often if necessary, for discussion of matters relating to the management of wildlife resources on or affecting the Bureau lands and to provide for other necessary meetings at various administrative levels for discussions of cooperative studies; plans; wildlife surveys; grazing; hunting, fishing, and trapping seasons; and such other matters as may be relevant to the wildlife resource and its habitat.
- (d) That all questions pertaining to the cooperative work of the two agencies which arise in the field will be discussed on the ground by the local representative of the Department and the Bureau, and that questions of disagreement will be referred to the State Director, Bureau of Land Management, and the Director of the Idaho Fish and Game Department for decision.
- (e) To promote a free exchange of information pertinent to the management of wildlife or Bureau resources between the personnel of the two agencies.



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- (f) That wherever a specific area of the National Land Reserve is designated for a program or project of intensive cooperative management or development such as game food planting, small exclosures, experimental plots, etc., then individual local agreements supplemental to this Memorandum of Understanding will be entered into by the parties hereto or their representatives covering the management or development of each such area of the national land reserve.
  - (g) That each and every provision of this Memorandum of Understanding is subject to the applicable laws of the State of Idaho and the laws of the United States.
  - (h) That nothing in this Memorandum shall be construed as obligating either the Department or the Bureau in the expenditure of funds, or for future payment of money in excess of appropriations authorized by law.
  - (i) That nothing herein contained shall be construed as limiting or affecting in any way the delegated authority of the Department or the Bureau.
  - (j) That this Agreement shall become effective as soon as it is signed by the parties hereto and shall continue in force until termination by either party upon thirty (30) days' notice in writing to the other of its intention to terminate upon a date indicated.



- (k) That no member of, or delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom in accordance with U. S. Code, Title 41, Section 22.
- (l) That amendments to this Memorandum of Understanding may be proposed by either party and shall become effective upon approval of both parties.

## APPROVED BY:

The State of Idaho  
Department of Fish and Game

Department of the Interior  
Bureau of Land Management

By: *Arthur R. Woodworth*  
Director and Secretary,  
Idaho Fish and Game Commission

By: *Joe T. Fallini*  
State Director

Date: November 13, 1962

Date: November 8, 1962



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Bureau of Land Management  
Washington, D. C. 20240

In reply refer to:  
4213.31  
4363.2A (712c)

September 10, 1964

Instruction Memo No. 64-468  
Expires 12/31/64

To: SD's, DM's

From: Assistant Director - Resource Management

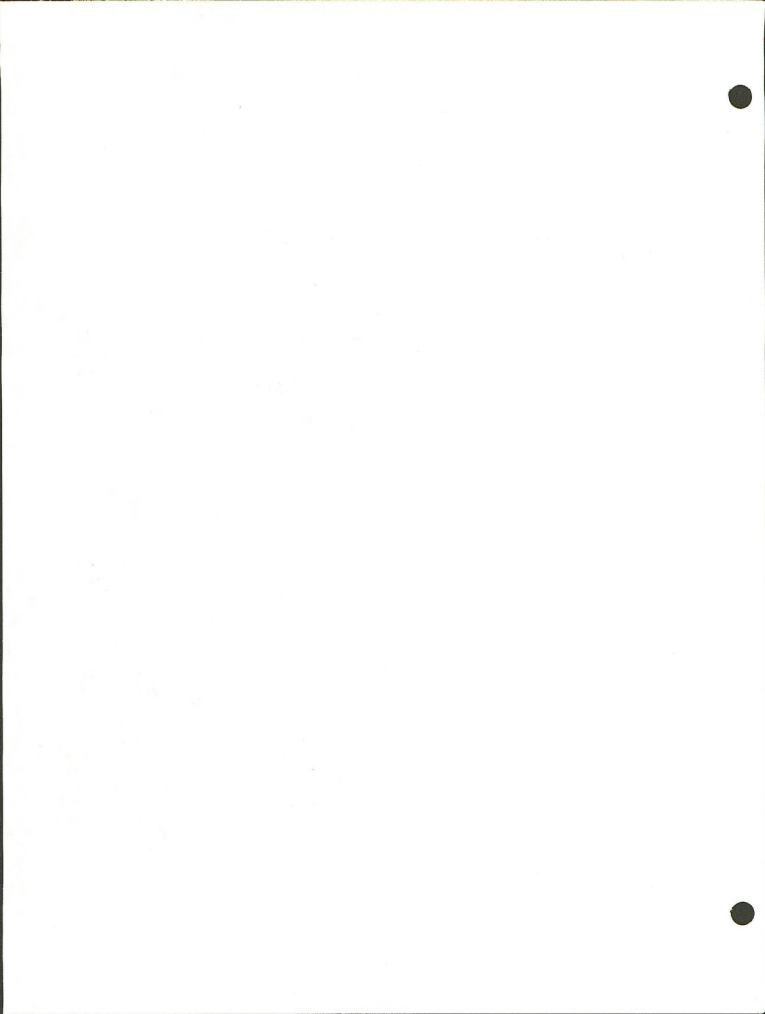
Subject: Interim guidelines for coordination and conducting of  
mechanical and chemical vegetative manipulation projects  
to provide protection for wildlife values

Because insufficient facts are available concerning the effects of wildlife and wildlife habitat of projects involving the removal or replacement of vegetation, the Bureau must take extra care to insure that wildlife and wildlife habitat values are fully considered in the planning and execution of such projects.

Research now underway and planned will provide some of the necessary answers. Newly developed information having management value will not be available for some time.

During the interim, the following guidelines will be used when planning and carrying out vegetation removal or replacement by chemical or mechanical means:

1. There must be coordination with all interests involved in the use of the proposed project area at an early stage in the planning cycle. This coordination should start with notification of all interests involved (State Wildlife agency, permittees, etc.) at least one year prior to planned accomplishment of the project. Written comments on the proposed projects should be requested. On the ground inspection of the proposed project areas by BIM, State Wildlife agency personnel, and permittees is not only desirable but is mandatory where doubt exists as to the impact of the project on the present uses of the area (see also Instruction Memo. 64-271). This joint inspection gives BIM an opportunity to explain how the project fits into the over-all management plan for the general areas of which the project area is merely a segment. In those cases where local agreement cannot be attained on a proposed project, the matter will be referred to the appropriate State Director of the Bureau for decision. In all cases a statement concerning the probable effects of the proposed project on wildlife and the recommendations of the State wildlife agency representative will be included with the project work





schedule (Form 4300-5). Agencies and other interested parties should be kept informed of long term plans as well as consulted on individual projects so that long term management implications may better be evaluated.

2. Generally brush control projects will not be carried out in areas which have been identified for their wildlife values in compliance with Bureau Instruction Memorandum No. D-9 dated December 24, 1963, or in areas which are subsequently determined to possess the same wildlife habitat values as those areas which have been so identified. Exceptions to this are those situations where brush control will have a definite beneficial effect on the wildlife habitat or when, on an individual site basis, a critical watershed problem can clearly and obviously be solved by brush control.

3. Extensive totally cleared areas shall be avoided unless mutually agreed upon by all of the interests involved. In some areas where either actual or potential wildlife use exists, a number of small cleared areas is preferred over one large area. In some cases this can be accomplished by leaving untreated areas along steeper slopes adjacent to drainage ways. Local conditions and the multiple uses involved will influence the size and shape of totally cleared areas.

4. Vegetation removal will be restricted to flat or gentle slopes and vegetation will not be removed from steep slopes, rough areas, stream borders, or from border strips along maintained roads. Specific site conditions (soil, exposure, precipitation, present use and possible future use by grazing animals, etc.) will be the criteria for determining the degree of slope to be treated in each individual instance.

5. The use of trial areas to evaluate the success and effects of spray and/or reseeding projects is recommended prior to large-scale project accomplishment where projects similar to those proposed have not been successful on like areas. Such facts as the mortality of desirable species, vegetative production before and after treatment, and actual annual precipitation at the project site should be determined before large-scale projects are carried out.

6. Active cooperation in the form of financial contributions to the project from the State wildlife agency is desirable.

7. Adequate care should be taken that special interest areas are not changed or destroyed. (See also Instruction Memo 64-132.)



Good judgment must be exercised so that the beneficial effects of selective vegetation removal are not lost as a result of lack of coordination or through public misunderstanding.

Additional, more detailed information on this subject will be forthcoming around the first part of calendar year 1965.



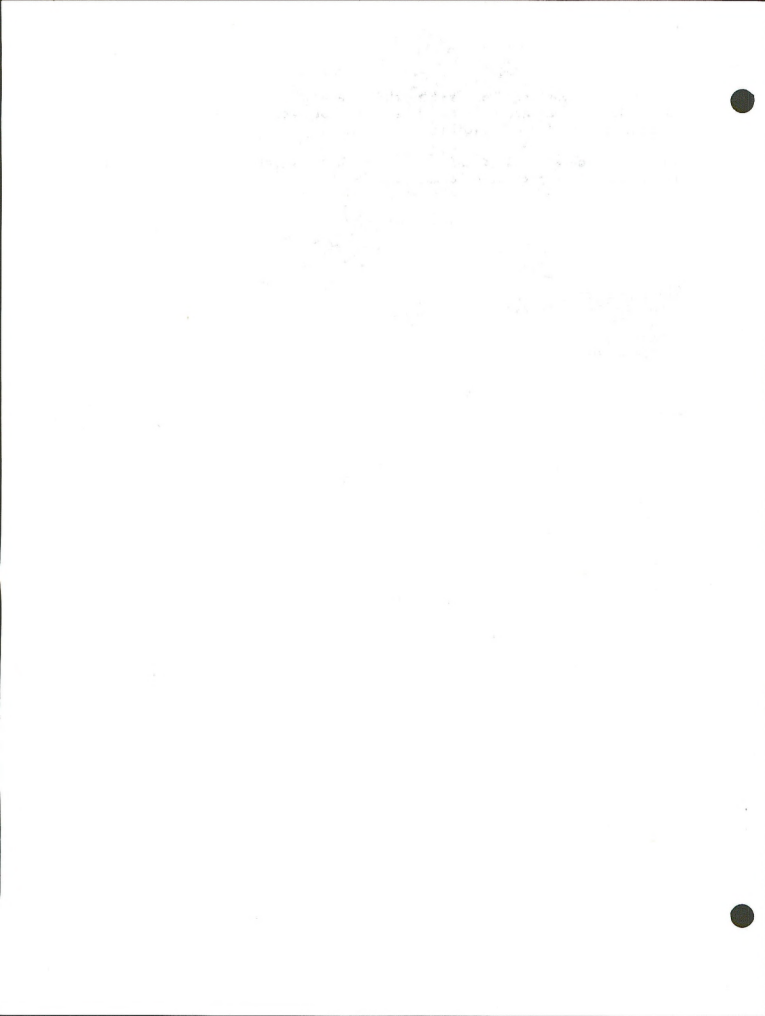
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D&RM - 5

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## 6620 - WILDLIFE HABITAT

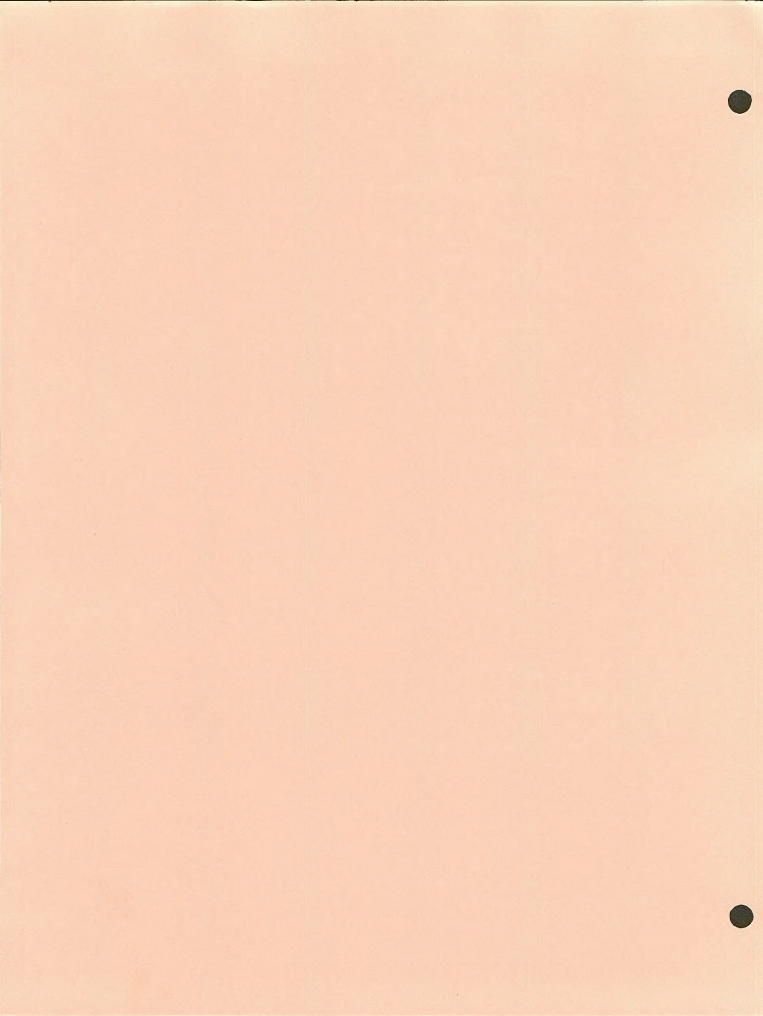
6624.3 Procedure for Coordination of Brush Removal Projects  
With the Idaho Fish and Game Department

If the Bureau of Land Management is to assume effective responsibility for maintenance of wildlife habitat resources on BLM-administered lands, close cooperation with the Idaho Fish and Game Department is necessary on proposed projects involving habitat modification.

BLM Manual, Vol. IX, Chapter 8.5.3C(2) prescribes advance consultation with the Fish and Game Department before commencement of brush control projects. Chapter 6.10.5(a) further states, "Should there be any possibility that brush control will adversely affect wildlife the problems will be thoroughly investigated and fully considered in the selection of areas for this treatment." Additional guidelines for coordination and conducting of mechanical and chemical vegetative manipulation projects to provide protection for wildlife values are delineated in Instruction Memorandum No. 64-468, September 10, 1964.

To insure adequate consideration of the wildlife resources located within areas of proposed brush control projects, whether by burning, spraying or mechanical means, the following procedures shall be adhered to:

1. The District Bureau of Land Management Offices will submit plans and requests for comments on all types of proposed brush removal projects to the Director, Idaho Fish and Game Department by not later than July 15 of the year preceding proposed treatment. Such plans shall include a map showing location and extent of the proposed project and narrative material describing the project and how it fits into the overall management plan for the general area of which the project area is merely a segment. A copy of this information is to also be provided to the State Director, Bureau of Land Management.
2. The Director of the Fish and Game Department will designate appropriate Department personnel to meet with the District Bureau of Land Management personnel, perform the field inspection, and compile the evaluation report concerning the probable effects of the proposed project on wildlife habitat and populations. The Director, Fish and Game Department will also advise the District Manager and State Director, Bureau of Land Management, as to identity of the persons assigned the investigative responsibility..



3. The field evaluation report will be submitted to the Director, Idaho Fish and Game Department for review, after which he will forward copies of the report to the District Manager concerned and the State Director, Bureau of Land Management, and to Department personnel who performed the inspection. This report is to be submitted to the Bureau of Land Management by October 20 of the year preceding proposed treatment.
4. A copy of the Idaho Fish and Game Department report will be included with the Bureau of Land Management project work schedule (Form 4300-5).
5. When advance land management planning becomes possible, District Managers of the Bureau of Land Management should advise the Idaho Fish and Game Department of projected plans so that long term management implications may better be evaluated and coordinated with program planning procedures.

This order is effective January 1, 1965.







Bureau of Land Management  
Idaho State Office  
Boise, Idaho

Division of Resource  
Program Management  
June 10, 1966

WILDLIFE HABITAT  
ADMINISTRATION AND MANAGEMENT  
WITHIN PLANNING UNITS

INTRODUCTION

General Information

-Should include general statements and information on wildlife species of Unit, hunting pressure and harvest, economic importance, impact on other land uses, etc.

Special Problems

List specific problems and impending problems such as habitat deficiencies, lack of access roads, over-populations of big game, competition for land use, etc. Also list possible remedial actions.

COOPERATION

Formal Agreements

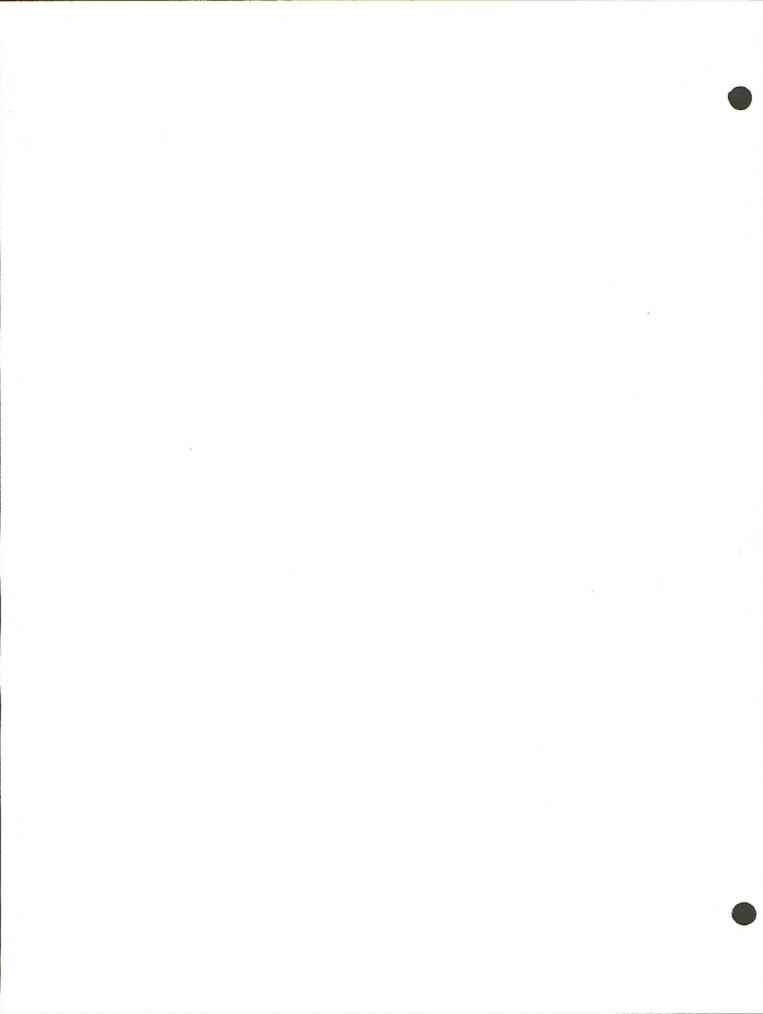
Include any formal agreements between BLM and other agencies or people that may have an effect on wildlife or wildlife habitat. If too bulky or inconvenient, make reference to file location where agreements are kept.

Informal Agreements

This should include letters or memoranda constituting an agreement. Verbal agreements should also be documented and placed here. If for some reason, an agreement is placed in a different file, or with a more specific plan, it should be noted.

Personnel

List the people with whom BLM personnel work closely on wildlife



matters. Include State, Federal and local agencies or groups. Devise plans for regular or periodic contact with these people and particularly with the Wildlife Representative on the District Advisory Board.

#### Meetings

List regularly held annual meetings and other meetings pertaining to wildlife and/or wildlife habitat that should be attended by BLM personnel. Within this section, meeting agenda, notes, talks, and training meetings should be noted.

#### PLANS AND ACCOMPLISHMENTS

##### Future Plans

This should be a listing of general plans, or even ideas, as to possibilities of benefitting wildlife through range improvement or rehabilitation. Include non-game species where applicable.

##### Current and Pending Habitat Improvement Plans

List all specific plans for the current fiscal year and "on-the-shelf" plans to be implemented as funds and manpower become available.

##### Herbicide and Pesticide Projects

Indicate location, size, and methodology of projects, status of clearance with other interested agencies, precautions or modifications made in interest of wildlife. Record locations of accomplished and proposed on map. Make reference to information filed elsewhere.

#### SPECIES MANAGEMENT

The main headings will be as follows:

Big Game  
Small Game  
Upland Game

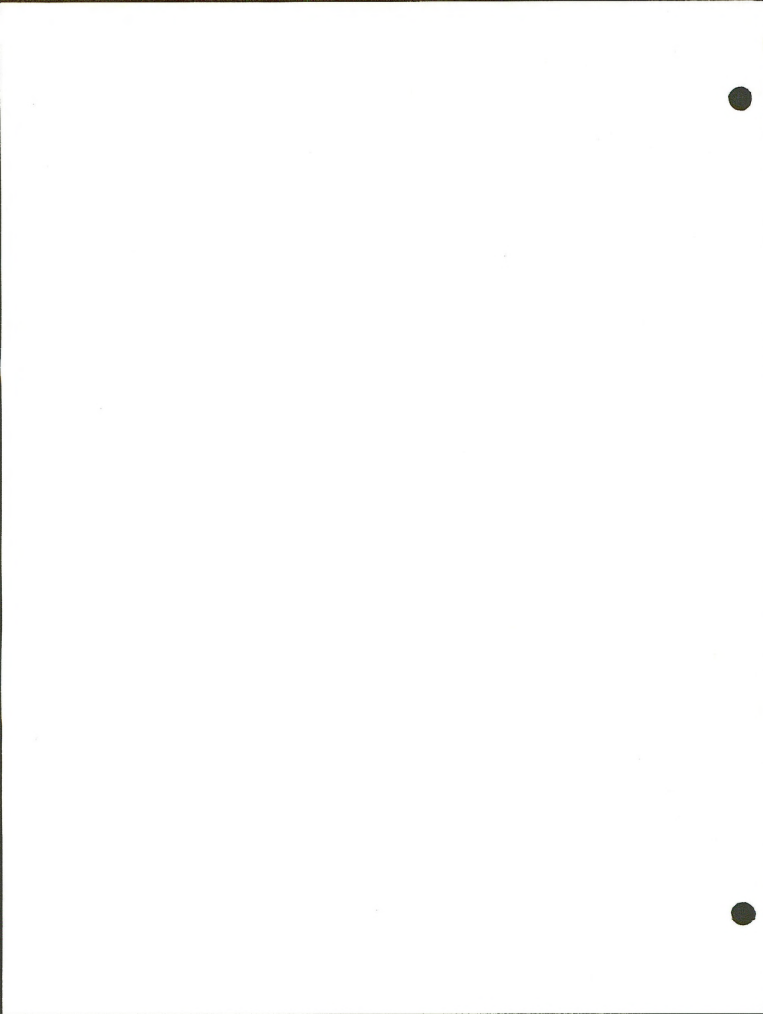
Waterfowl  
Furbearers  
Non-game Species

Predators



Under each heading will be listed those species for which a habitat management plan is needed in the Unit. Listed below are specific items that should receive consideration for each species.

1. General history and present situation (past and present situation, abundance, habitat condition, harvest and management, migration routes, etc.).
2. Optimum potential and management objectives when considered with other uses and interests.
3. Special problems and recommendations.  
Include items such as access, animal damage, habitat deficiencies, competition with other game or livestock, Resource Conservation areas, transplants or introductions, special seasons, land status, regulations, etc.
4. Areas where coordination is needed between other BLM Administrative Units or Districts, or other agencies, or uses, or user groups.
5. Administrative studies -
  - a. Needed (where, by whom, cooperation, etc.)
  - b. What is being done? Exclosures, transects, etc.  
Show locations on maps, where records are kept-- who is doing, etc.
  - c. Completed studies (list and indicate location of records and reports).
6. Research (should include same information as Administrative Studies).
7. Habitat improvement plans, needs and problems in general.  
Specific plans can be listed above in Plans and Accomplishments.



Fish management may or may not need be broken into cold, or warm water, or anadromous species depending upon the local situation. The information desired will correspond with that required for animal wildlife.

Items of special consideration should include:

Effect of adjacent land use  
Pollution and erosion  
Undesirable species  
Access situation

Stocking  
Spawning facilities  
Water Development Projects

## APPENDIX

### Maps

Good maps kept up-to-date add clarity and efficiency to wildlife habitat understanding, planning, and management. Maps should include the following information:

Status.

Areas of vital importance to fish and wildlife species.

Location of transects, exclosures, and studies.

Game management units.

Proposed rehabilitation projects.

Completed rehabilitation projects.

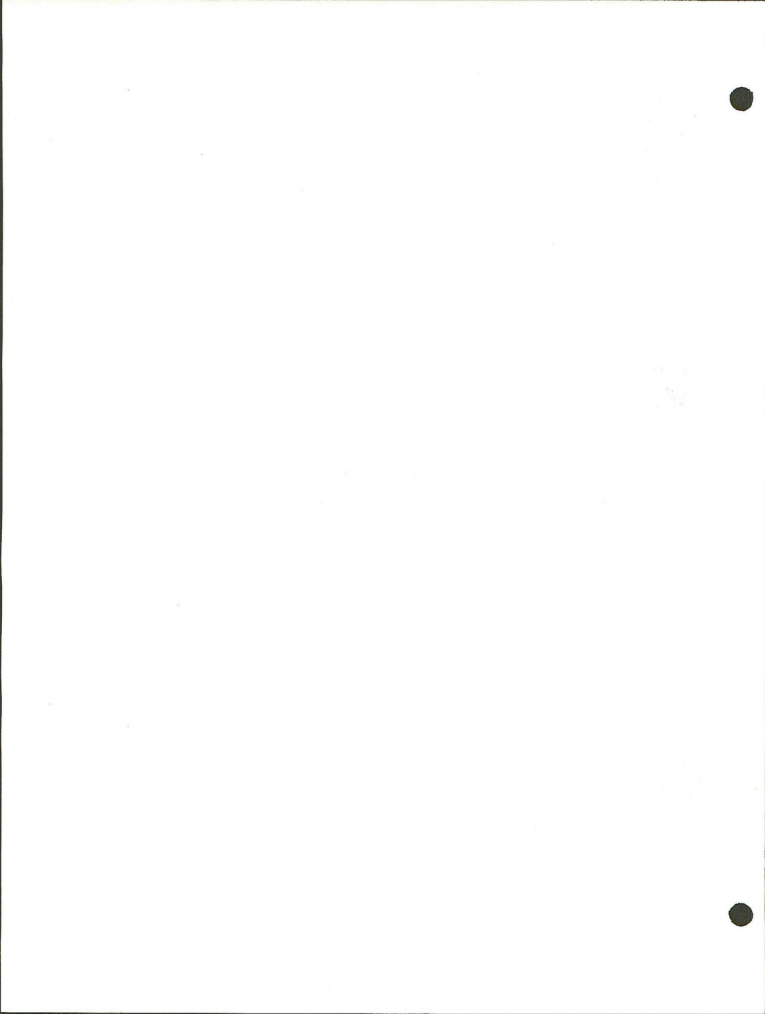
Other information may be added as needed. It may be that overlays on the status map would be desirable.

### Statistics

Harvest information by location if possible.

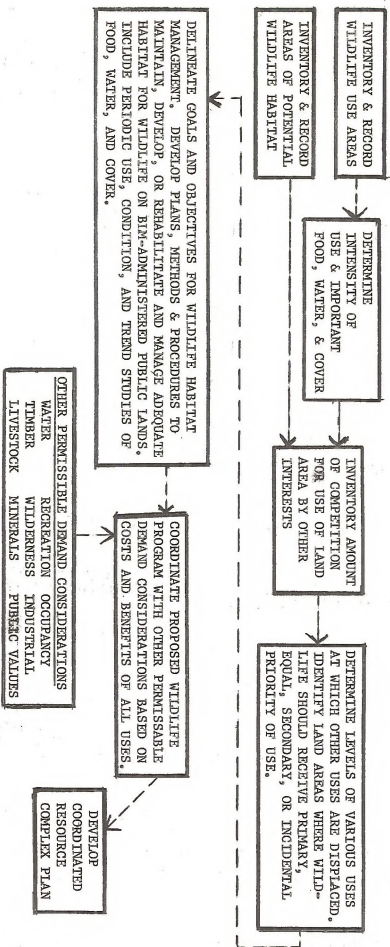
Estimated population sizes.

Pertinent social and economic information.





PROCEDURES FOR  
COORDINATING WILDLIFE HABITAT MANAGEMENT  
INTO THE BLM MULTIPLE USE PROGRAM



OTHER PERMISSIBLE DEMAND CONSIDERATIONS  
WATER RECREATION OCCUPANCY  
TIMBER WILDERNESS INDUSTRIAL  
LIVESTOCK MINERALS PUBLIC VALUES



WILDLIFE RESPONSIBILITIES  
WITHIN A BLM DISTRICT

Determine wildlife use areas  
Determine amount and intensity of wildlife use and important  
food, water, and cover  
Determine migration routes  
Determine amount of competition for land use by other interests  
Evaluate economic costs and benefits of wildlife  
Confer and make decisions on land areas where wildlife is to  
receive primary, equal, secondary or incidental consider-  
ation to other uses  
Develop management plans for existing wildlife habitat areas  
Plan rehabilitation of wildlife habitat  
Initiate periodic use, condition, and trend studies of food,  
water, and cover  
Recording of wildlife information on maps and in narrative form  
Coordinating wildlife habitat problems and programs with Fish  
and Game Department, or other agencies and groups  
Solving access problems  
Investigating trespass problems  
Reviewing proposed brush control, water development, and fencing  
projects  
Establishing cooperative research and development programs  
Noting archaeological and historical sites and potential  
recreation areas  
Evaluating need for public use facilities  
Coordinating with classification programs in regard to public  
domain lands  
Writing wildlife sections of water development project impact  
reports  
Programming and budgeting  
Coordinating wildlife habitat needs with fire zoning and  
protection programs  
Training, presenting and receiving  
Attending sportsmen and user groups meetings  
Information and education work and provide information to  
district wildlife representatives



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

COOPERATIVE AGREEMENT

WILDLIFE RESOURCE IMPROVEMENT PROJECT

I. (Name of State Wildlife Agency)

hereinafter called COOPERATOR, and UNITED STATES OF AMERICA, by the Bureau of Land Management, hereinafter called the Bureau, for and in consideration of the mutual benefits hereunder, and in accordance with the Taylor Grazing Act (43 U.S.C. 315, 315a-315r), as amended do enter into this COOPERATIVE AGREEMENT for:  
(Describe project)

and collectively hereinafter called improvements, for the benefit of the wildlife resource on the public lands.

II. The improvements known as

are located within Sections \_\_\_\_\_, Township \_\_\_\_\_, Range \_\_\_\_\_,  
\_\_\_\_\_ Meridian, County of \_\_\_\_\_, State of \_\_\_\_\_

III. It is mutually agreed that materials, labor, equipment, project installation, supervision, maintenance, etc., will be as follows:

a. The COOPERATOR will furnish:

b. The Bureau will furnish:

- a. The improvements may be removed, in whole or in part, during the term of this agreement or any extension thereof, by mutual consent of the parties or by direction of the Bureau; such removal shall be made by the COOPERATOR, or by the Bureau at its option. Upon removal of the improvements, any saleable material, after deducting an amount to compensate for the actual cost of removal shall be available for distribution to the parties subject to this agreement in proportion to the actual amount of their respective contributions to the initial construction of the improvements, as determined by the project records of the Bureau. The parties shall take possession and remove their portion of the salvaged material within 90 days after first notification in writing that such material is available; upon their failure to do so within the time allowed, the material shall be deemed to have been abandoned and title thereto shall thereupon rest in the United States.
- b. During the course of salvaging the material, the United States assumes no responsibility for the protection or preservation of said material.
- V. Should the land upon which the improvements are constructed be included in application for classification and disposal under Sections 7 and 14 of the Taylor Grazing Act, or other public land laws, the Bureau agrees not to allow such application if advancement of the application or disposal is determined to be in the public interest and until the applicant has agreed in writing to compensate the COOPERATOR for his loss of the improvements in an amount mutually agreed upon and payable separately to the Bureau and to the COOPERATOR. If the parties are unable to agree, the district manager will determine the present reasonable value of the improvements in accordance with 43 CFR 4115.2-5a(7) or 43 CFR 4112.3-5a, which-X. Special Conditions and Restrictions.

IX.

ever is applicable and determine the amounts payable to the Bureau and to the COOPERATOR will be in proportion to the actual amount of their respective contributions to the initial construction of the improvements; or the Bureau may require the removal of such improvements under the provisions of Section IV(a) of this agreement.

The COOPERATOR'S use of the improvements shall be in conformity with the regulations specified in 43 CFR 4110 or with 43 CFR 4120 whichever is applicable, or to the special stipulations included in this agreement, if any, or to the Management Plan, if any, for the area in which the lands serviced by these improvements are located; to the extent such rules, stipulations, and plans are applicable for the conservation, protection, and proper utilization of the improvements constructed hereunder.

This agreement shall not accord to the COOPERATOR any preference, privilege, or consideration not expressly provided herein.

This agreement shall remain in full force and effect ☐ indefinitely ☐ 5 years ☐ 10 years unless (1) sooner terminated by mutual written consent of the parties; or (2) is terminated by the COOPERATOR'S violation of any of the terms of this agreement; or (3) in accordance with Section IV or V of this agreement.

Items II and III of this agreement may be modified or cancelled by written agreement of the parties, which agreement shall become a part hereof. Items IV through VIII may also be amended by mutual consent of both parties, but first must be approved by the State Director.

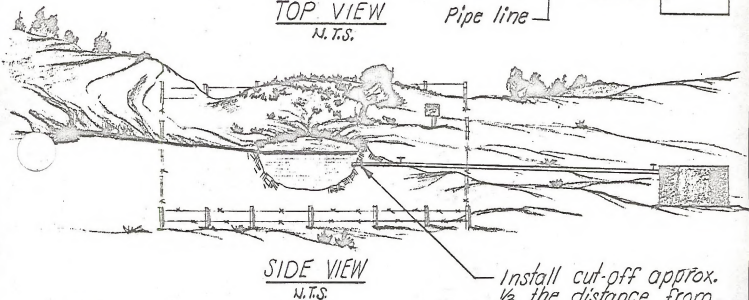
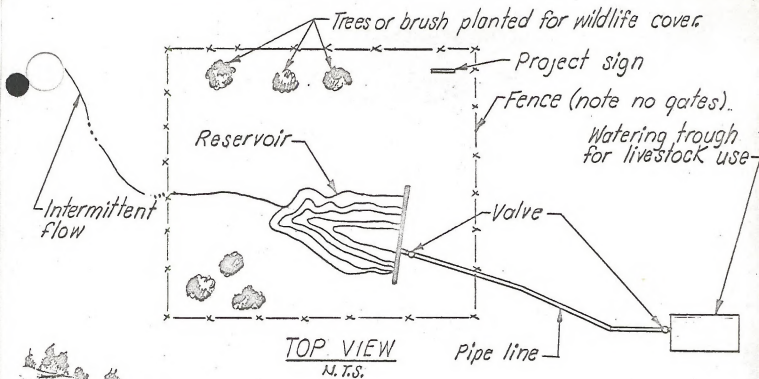
UNITED STATES OF AMERICA

Bureau of Land Management

By \_\_\_\_\_

(Title)

(Date)



NOTE:

Install pipe at a depth for adequate supply of water yet high enough so that it will not become silted shut.

Install cut-off approx.  $\frac{1}{3}$  the distance from the water to the outside edge of embankment. (See note for installation of pipe)

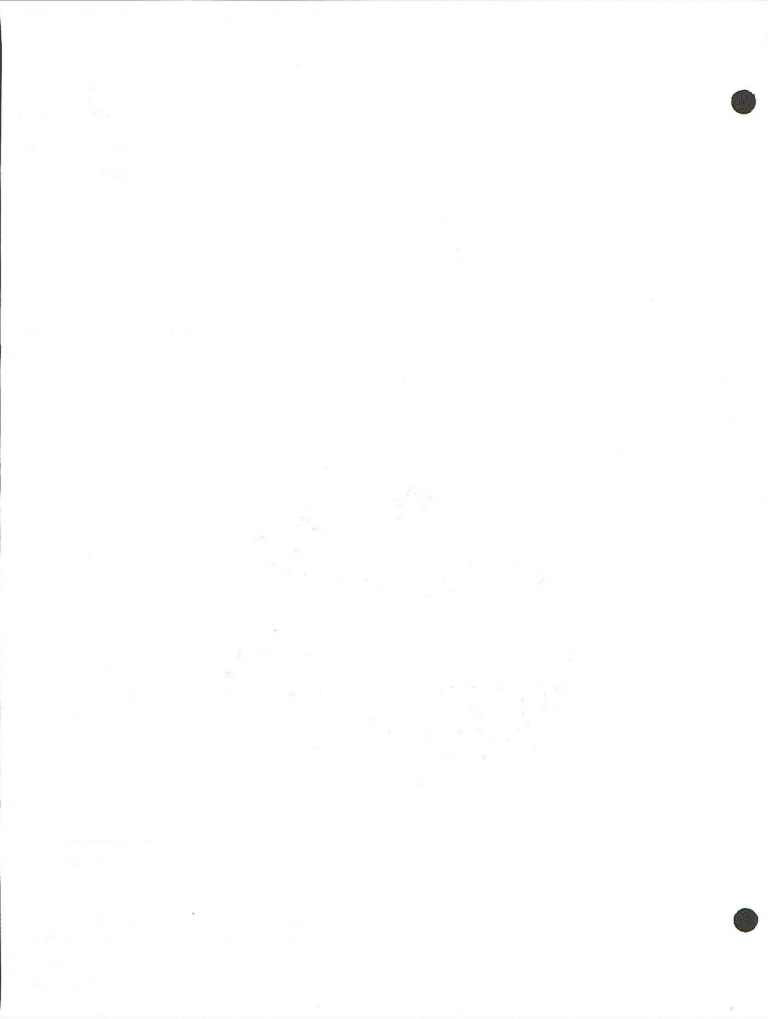
UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

# SMALL RESERVOIR AND TROUGH

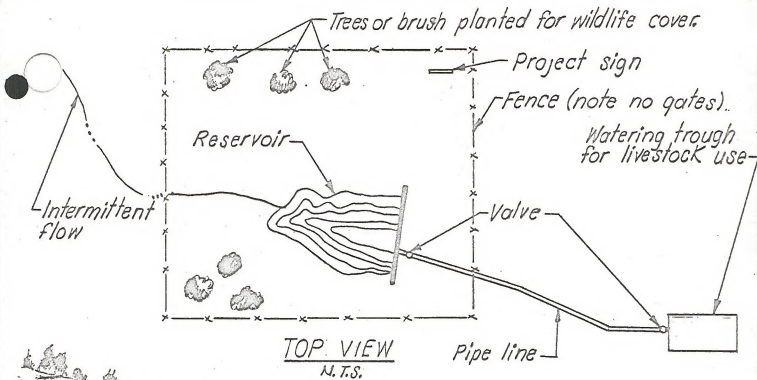
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IDAHO STATE OFFICE

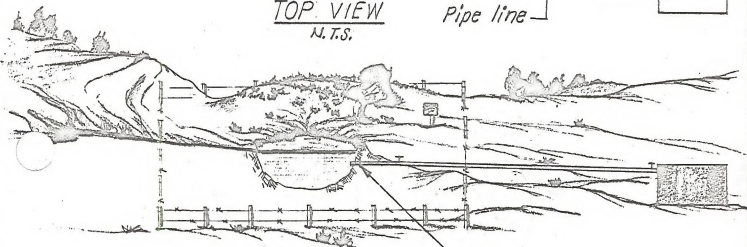
ISO-1







SIDE VIEW  
N.T.S.



NOTE:

Install pipe at a depth for adequate supply of water yet high enough so that it will not become silted shut.

Install cut-off approx.  $\frac{1}{3}$  the distance from the water to the outside edge of embankment. (See note for installation of pipe)

UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

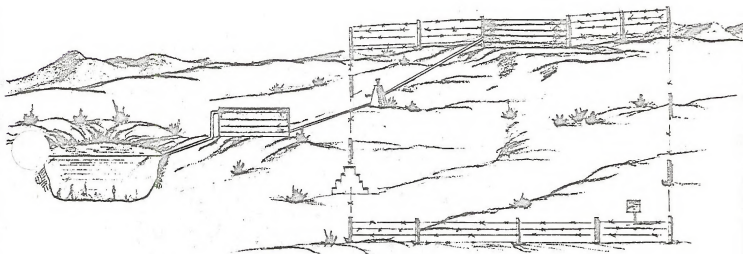
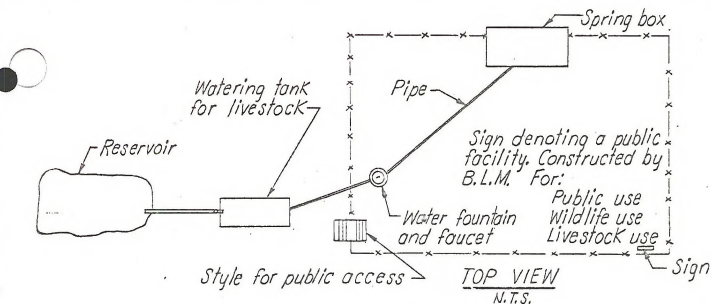
**SMALL RESERVOIR AND TROUGH**

5-10-65

IDAHO STATE OFFICE

ISO-1





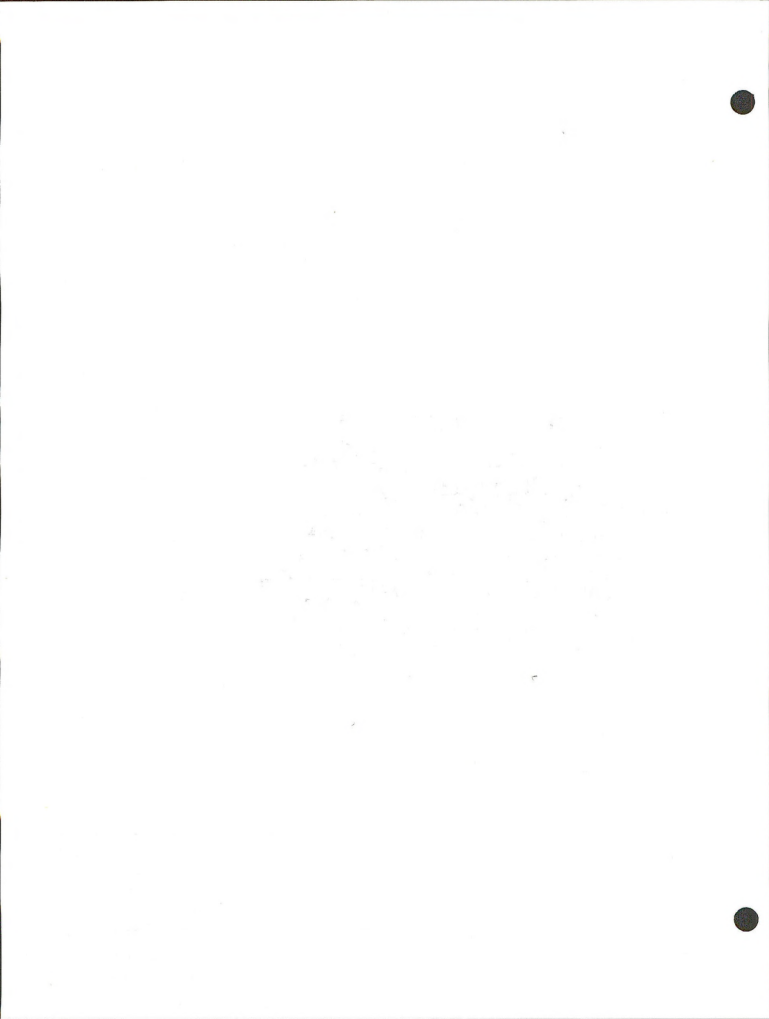
UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

**SPRING DEVELOPMENT MULTIPLE USE**

5-10-65

IDAHO STATE OFFICE

ISO-2



*Planted trees or shrubs  
for wildlife cover.*

*Spring box*

*Plastic pipe*

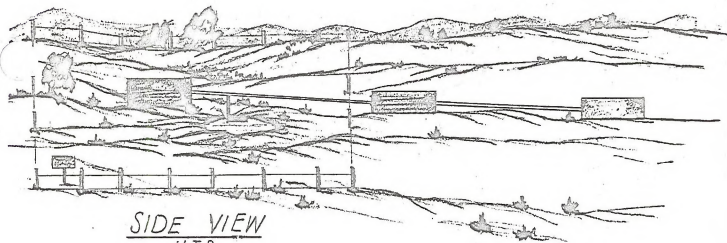
*As needed, troughs may be  
placed intermittently in a  
continuous line and as long  
as there is an ample water  
supply.*

*Run water for wildlife use  
into natural depression  
(See detail #1 for attachment)*

*Project sign*

TOP VIEW

*N. T. S.*



SIDE VIEW

*N. T. S.*

MAIN PIPE LINE

*1/4" Reducer*

*Petcock in established  
pipeline*

DETAIL #1

*N. T. S.*

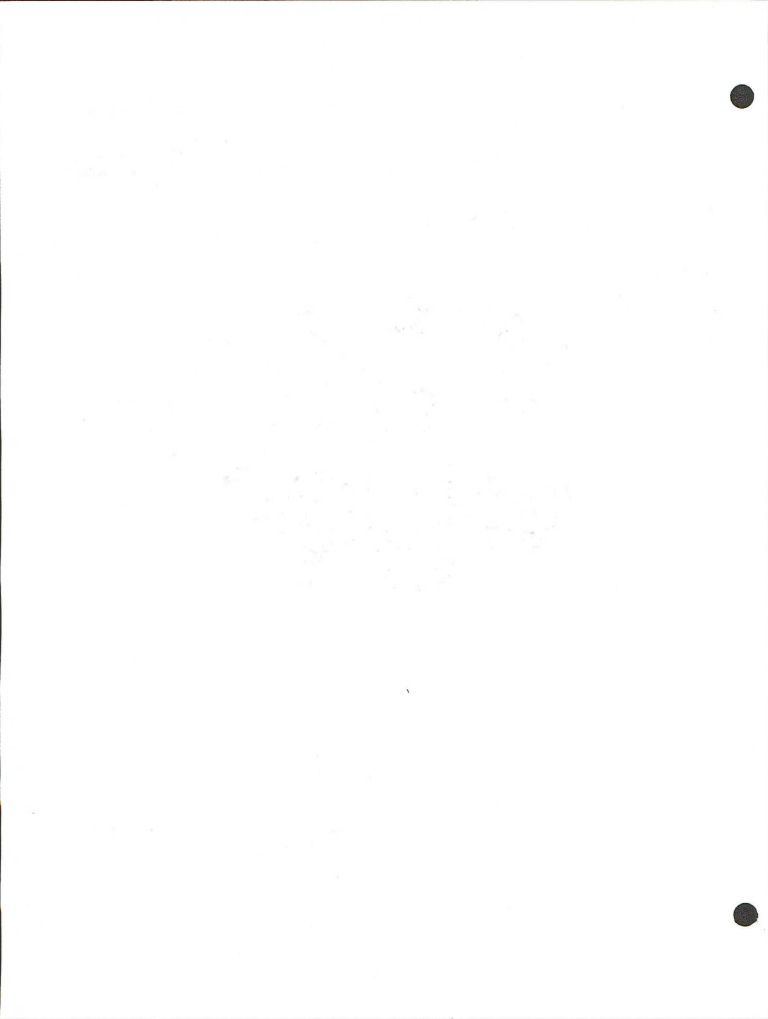
UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

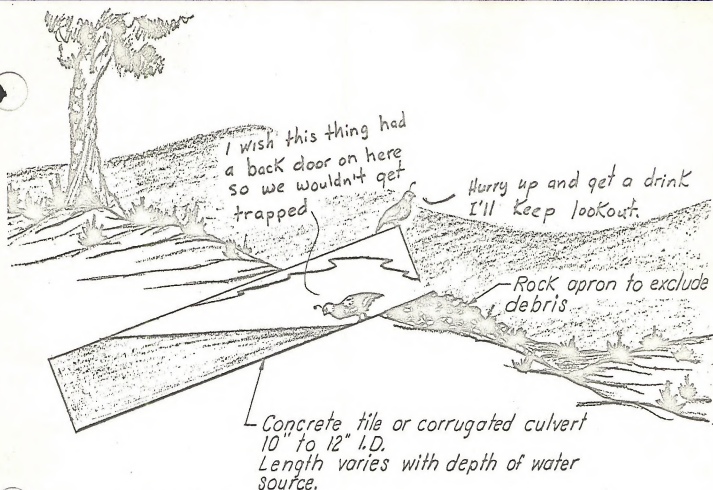
**SPRING DEVELOPMENT-AND TROUGH**

5-10-65

IDAHO STATE OFFICE

ISO-3





### SLOPING TILE WATERING DEVICE

N. T. S.

#### NOTE:

To be installed in weak seeps  
or at sealed spring developments.

UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

#### SPRING DEVELOPMENT—SLOPING TILE

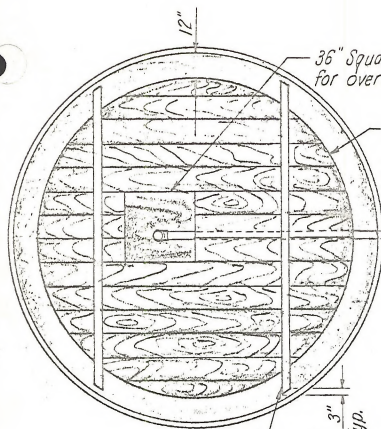
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IDAHO STATE OFFICE

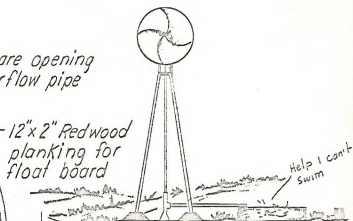
ISO-4







TOP VIEW  
1/4" = 1'-0"

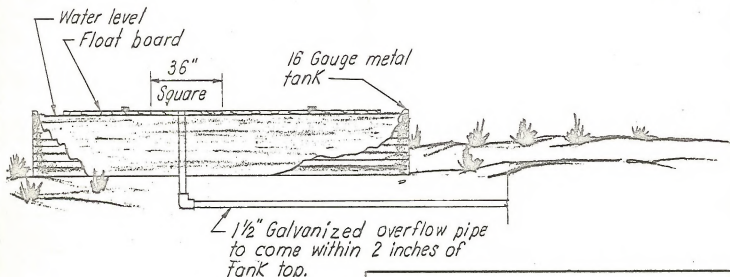


WINDMILL AND WATERING TANK

N. T. S.

NOTE:

1. The objective of float boards is to help cut down the water evaporation in the tank.
2. To give game birds, in the process of obtaining drinking water, a structure which may help them escape should they fall into the tank.



SIDE VIEW  
1/4" = 1'-0"

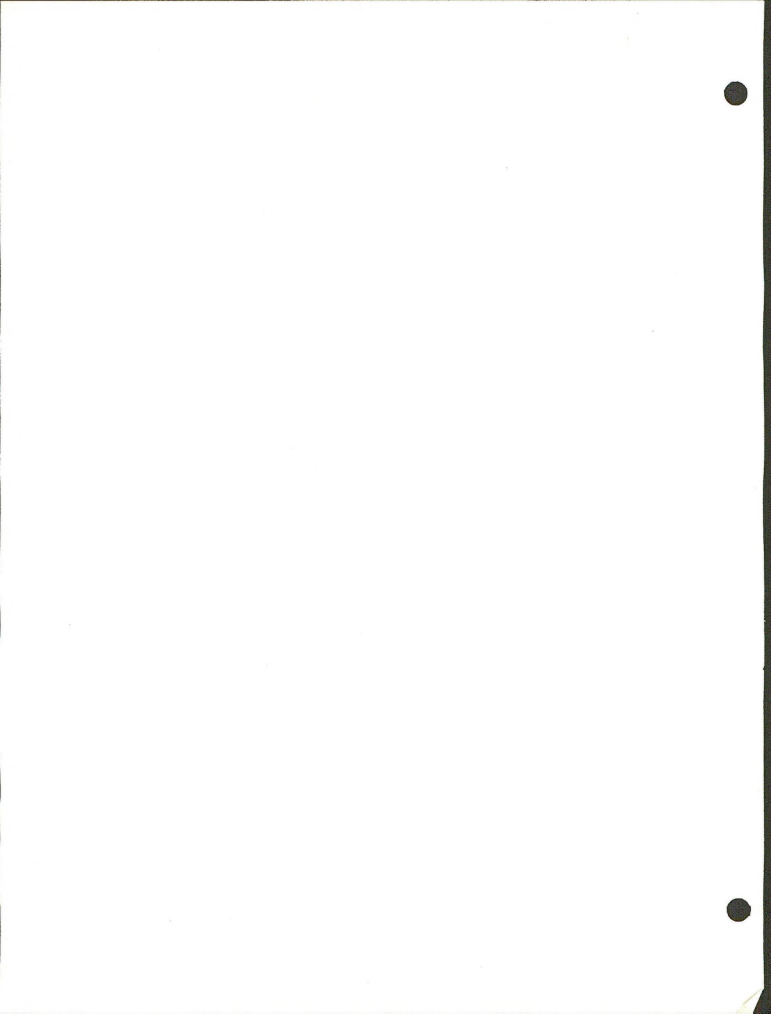
UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

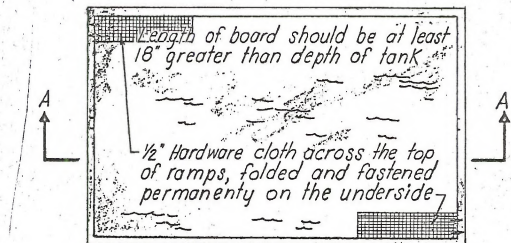
TROUGH FLOAT BOARD

5-10-65

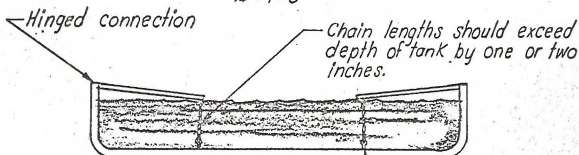
IDAHO STATE OFFICE

ISO-5





TOP VIEW  
1/4" = 1'-0"



NOTE:

The objective of the ramp is to allow young birds and other small animals a chance to utilize water in a trough and escape should they fall into the water. This method should serve to help keep the trough clean. At least, rocks should be piled in each end of trough to give birds a chance to get out, but rocks are apt to be thrown out by the first person who comes along

SECTION A-A  
1/4" = 1'-0"

Eye bolt welded to bottom of tank.

UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

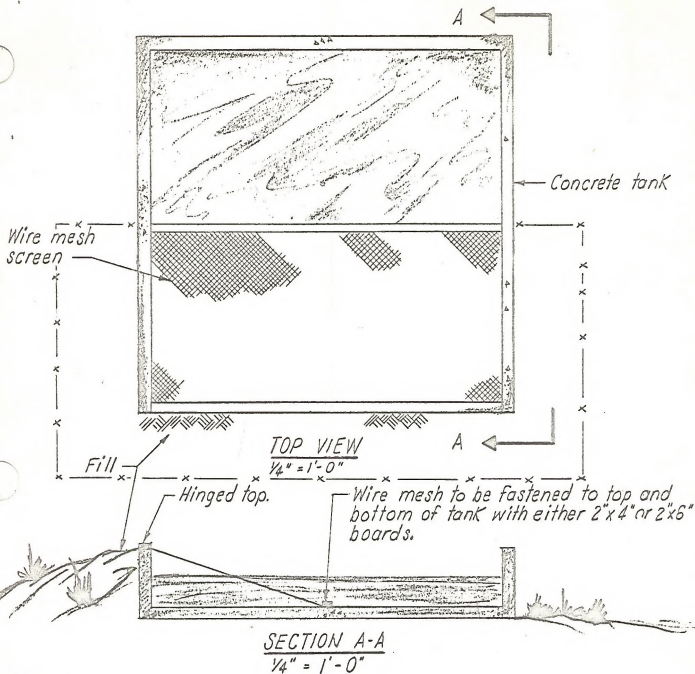
**TROUGH BIRD LADDER**

5-10-65

IDAHO STATE OFFICE

ISO-6





NOTE:

1. Use approved concrete expansion anchors on the bottom of the tank and hinges for the top of the tank, with the use of hinges the screen may be pulled back for cleaning.
2. This method will give livestock the use of one side of the tank and game birds the other.

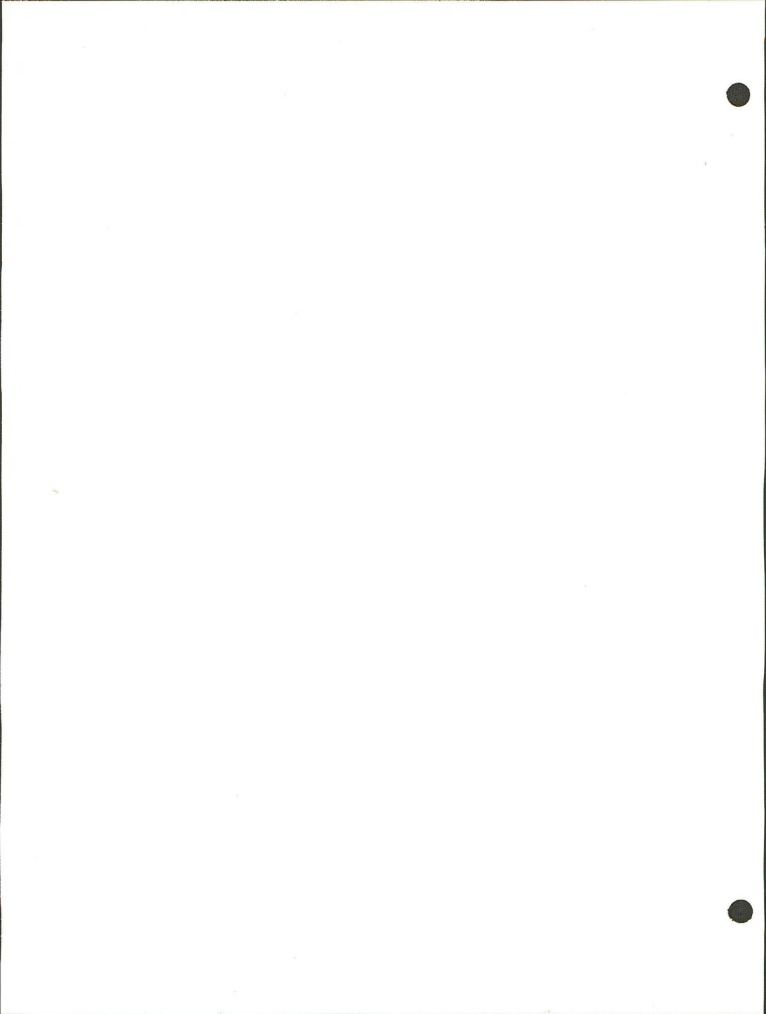
UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

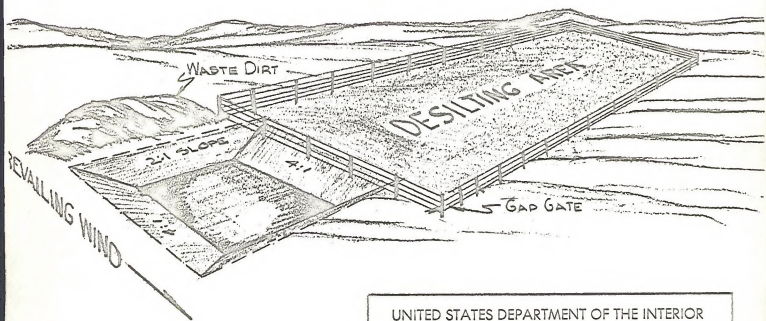
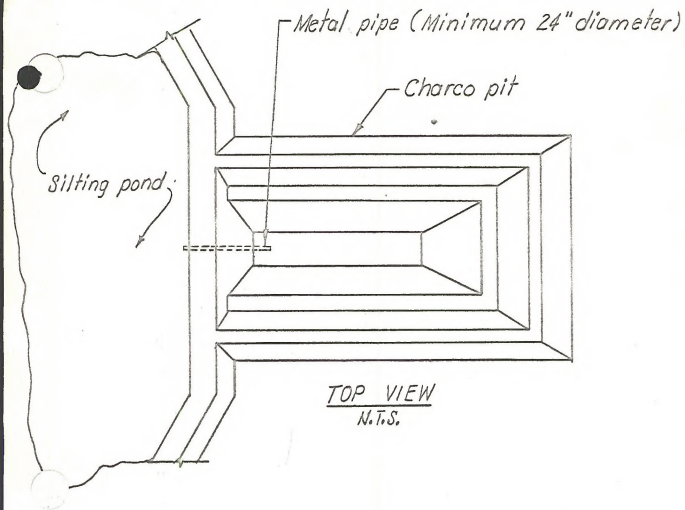
CONCRETE TANK BIRD LADDER

5-10-65

IDAHO STATE OFFICE

ISO-7





UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

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IDAHO STATE OFFICE

ISO-8





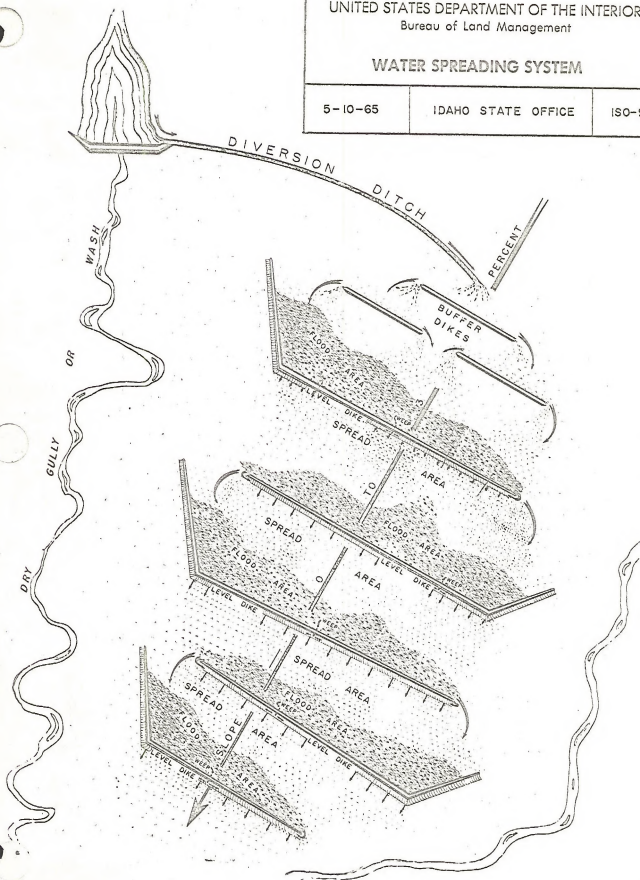
UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

WATER SPREADING SYSTEM

5-10-65

IDAHO STATE OFFICE

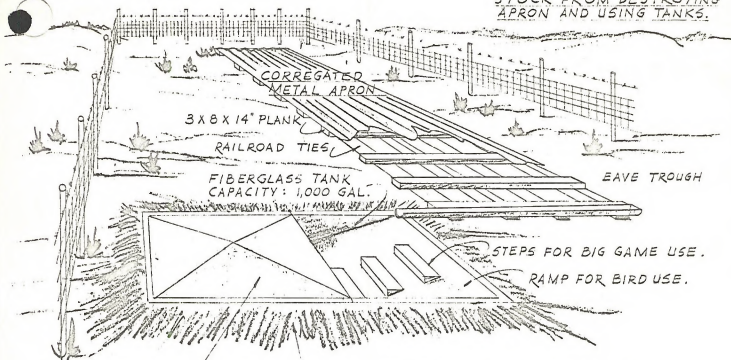
ISO-9



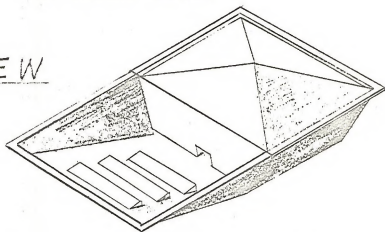


SITE LOCATED TO TAKE  
ADVANTAGE OF SLOPE FOR  
DRAINAGE.

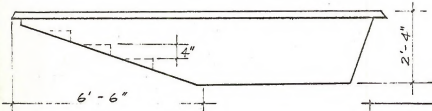
FENCE TO KEEP LIVE-  
STOCK FROM DESTROYING  
APRON AND USING TANKS.



PLAN VIEW



COVER & BASIN



SIDE VIEW  
BASIN

UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

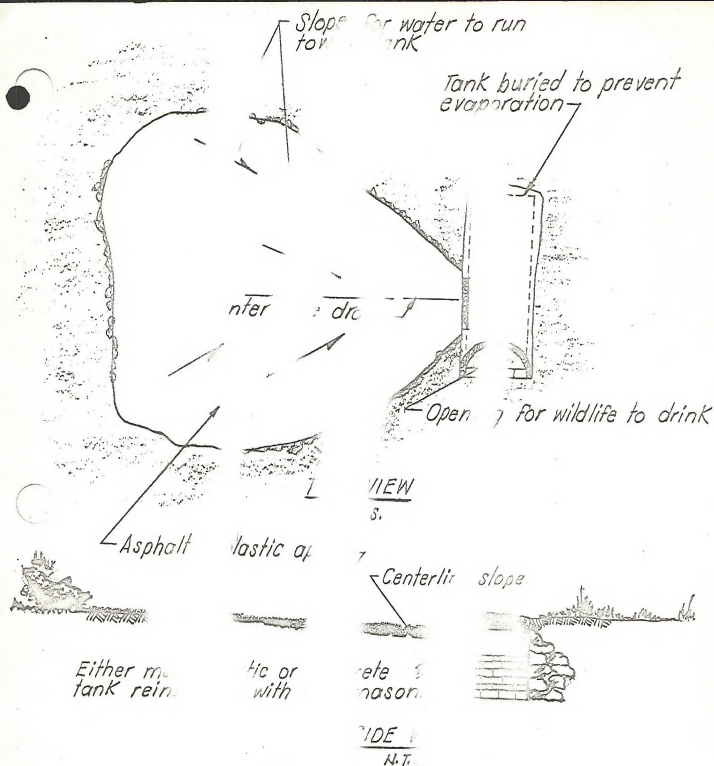
WATER CATCHMENT FOR BIRDS

5-10-65

IDAHO STATE OFFICE

ISO-10





UNITED STATES DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

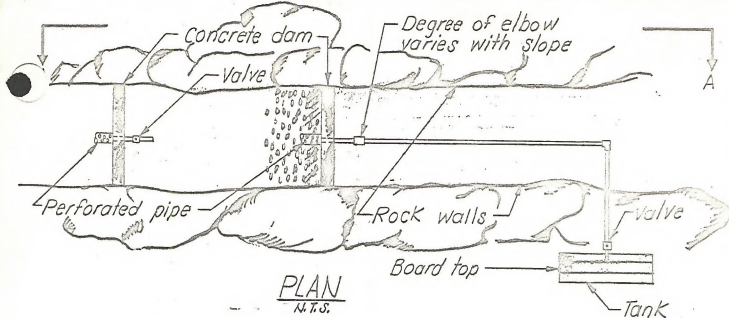
**WATER CATCHMENT FOR BIG GAME**

5-10-65

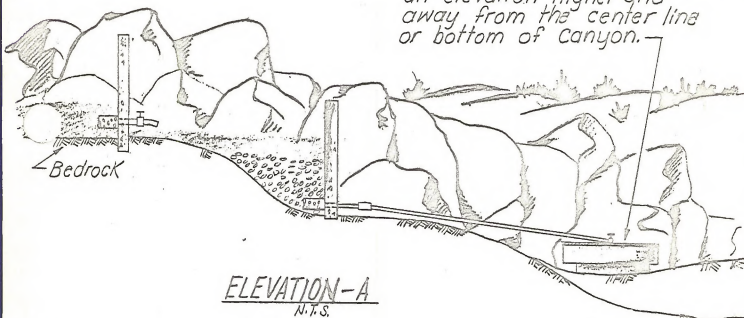
IDAHO STATE OFFICE

ISO-11





*If possible, install tank at an elevation higher and away from the center line or bottom of canyon.*



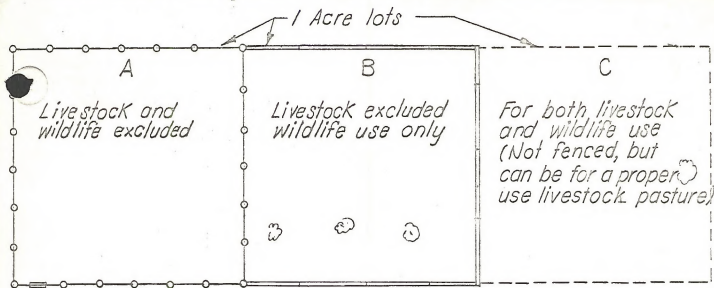
NOTE:

*Sketch shows plan and elevation of concrete dams connected in series. Dams are installed in a canyon with rock walls and floor. The upper dam being built after the lower dam fills with gravel and debris.*

UNITED STATES DEPARTMENT OF THE INTERIOR Bureau of Land Management		
REINFORCED CONCRETE DAM		
5-10-65	IDAHO STATE OFFICE	ISO-12

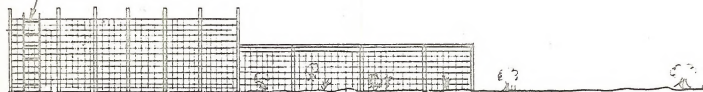






TOP VIEW  
N.T.S.

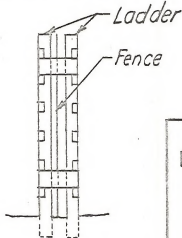
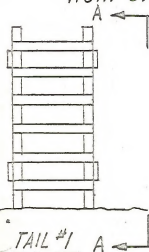
See detail #1



SIDE VIEW  
N.T.S.

NOTE:

A provides data on non-use.  
B provides data on wildlife use.  
C provides data on livestock use by subtracting B findings from C.



SECTION A-A

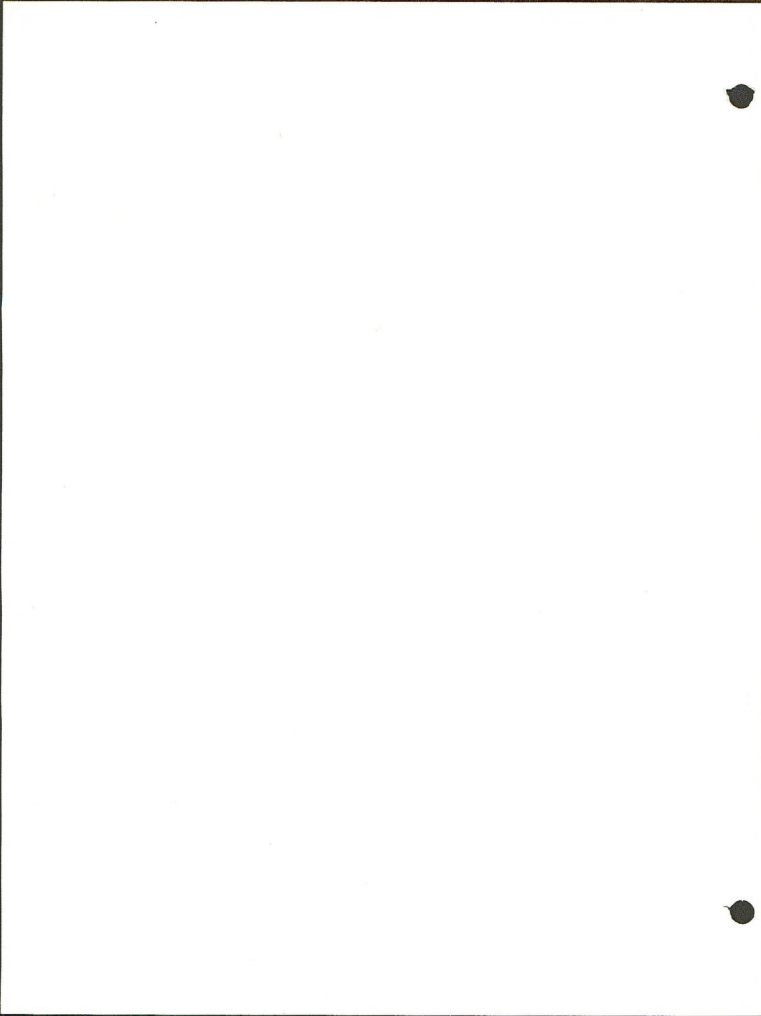
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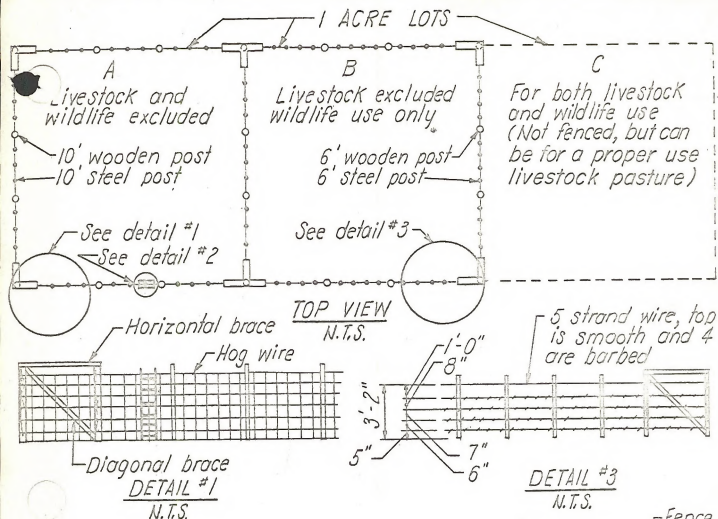
LIVESTOCK AND GAME RANGE  
ENCLOSURE

5-10-65

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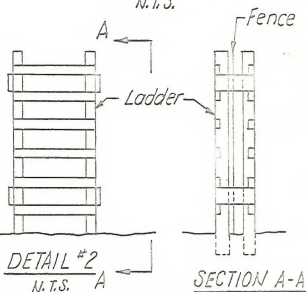




**NOTE:**

1. Place an 8'-0" horizontal wood brace post and a 11'-0"± diagonal brace post on each side of all four corners of lot "A". The same type bracing will be used for lot "B" except that the horizontal brace will be 6'-0" and the diagonal brace will be 8'-6"±. It will only be necessary to brace six sides of lot "B" since it butts up to lot "A".

2. The posts in lot "A" are to be placed so that there is one wooden post and then three steel posts. The posts for lot "B" will be placed one wooden post to four steel posts.



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**LIVESTOCK AND GAME RANGE  
EXCLOSURE**

